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ADDRESS

IN DENTAL AND ORAL SURGERY.

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One of the duties of a Chairman of a Section is to examine, sift, and weigh the material that has accumulated during the year in relation to the department of medicine over which he may preside in this Association, and which may have more or less legitimate claims upon the profession as new discoveries, new theories, or improvements in methods of operating; or treatment, and to bring to your notice such of them as are in his judgment of greatest importance. This I have found to be by no means an easy task. My report, however, will be brief.

TRANSPLANTATION OF TEETH.

Let me first call your attention to a matter which has somewhat startled the scientific world, and particularly that portion of it interested in dental and oral surgery, viz.: the discovery made by W. J. Younger, M D., of San Francisco, California, that teeth can be transplanted into artificial sockets drilled in the jaws, and apparently, made to unite with the surrounding tissues as firmly as though placed there by the natural process of dentition.

The operation of transplanting teeth from the mouth of one individual into the natural alveoli of another was first performed by John Hunter, but it soon fell into disrepute from the annoyances and dangers which so often followed it, among which may be mentioned immediate suppurative inflammation, which prevented the union of the tooth with the alveolus; subsequent alveolar abscess, the result of the putrefaction of the pulp; necrosis of the jaw, and occasionally tetanus.

The revival of this operation, and the introduction of *replanting* teeth as a curative measure for alveolar abscess, under antiseptic precautions, a decade or more ago, viz.: the extirpation of the pulp, the filling of the pulp canal, and the washing of the tooth and alveolus with some one of the antiseptic preparations, has placed it among the successful operations, so far as the immediate annoyances and dangers before mentioned are concerned. But the operation really cannot be called successful even in those cases where firm union has taken place, for in very many of them, sooner or later, resorption of the root occurs similar to if not identical with that phenomenon which takes place in the process of shedding the deciduous teeth, and the tooth becomes loose, and either drops out or has to be extracted. The failures in the operation of transplanting have been variously estimated at from 25 to 50 per cent., but when we take into consideration the fact that very many of the teeth thus treated fail after a year or two of union, the percentage must be very much higher.

Quoting from the *Pacific Medical and Surgical Journal and Western Lancet*, January, 1886, Dr. Younger says: "*But transplantation can be made a success and void of all danger and unpleasant consequences, if only common sense, cleanliness, and ordinary skill and care are taken.* And it is to prove this and unprejudice the scientific mind, and through it the public, and do away with the abomination of false teeth, that he "presents to the profession the results of his experiments and experience in this direction.

"He gained courage to try the operation by reflecting on the experiment of John Hunter, who to test the vitality of the pericementum, planted a tooth in a cock's comb. This tooth attached itself firmly to the crest, and a few months afterwards the cock was killed and microscopical examination showed that a living union had taken place, the blood-vessels of the comb and pericementum having established free communications."

Dr. Younger "also tried the experiment upon a cock's comb, to further and personally assure himself of the truth of this statement, and confirmed, as far as attachment was concerned, the experiment of the great surgeon. But in his experiment, he took the precaution of removing the pulp and filling the pulp chamber and root canal with a preparation of gutta percha much used by dentists for temporary fillings. This was in order to avoid any trouble from a decomposing pulp. The tooth was then well cleansed with warm water and dipped in a disinfecting solution.

"The success of this experiment satisfied him that the pericementum would attach itself to any vascular body, and that if properly planted in a fresh socket it would attach itself and form a living union with the surrounding tissues, without the production of after-pains or other evil consequences.."

The first practical experiment upon the human subject of transplanting a tooth into a natural alveolus performed by Dr. Younger was on January 24, 1881. The tooth was treated in the same manner as that described for transplantation in the comb of the cock: the alveolus was washed out with a disinfecting

solution, the apex of the root trimmed to make it of the desired length, and then pressed into position, and retained by delicate silk ligatures attached to adjoining teeth. At the end of four weeks the ligatures were removed and the tooth found to be firmly attached to the surrounding walls of the alveolus, and at the time of writing his paper, was still doing good service.

Dr. Younger reports "between thirty and forty cases of transplanting into sockets already formed" —natural sockets—with "but two failures;" one due to the neglect of the patient, and one to his own inexperience. These are remarkably good results, so far as they go, but a sufficient length of time has not yet elapsed to prove them permanently successful, for resorption of the roots may yet take place and the teeth be lost. This has been the experience of many of the most careful and painstaking operators, and I shall be greatly surprised if in some of Dr. Younger's cases which now appear to be successful, this does not prove to be the final outcome.

Thus far in the experiments of Dr. Younger, he has traveled over the same ground previously traversed by many others of his professional brethren, but from this point he enters a new and entirely unexplored field, and first introduces the novelty of making a garden or nursery of a cock's comb in which he plants freshly extracted teeth, and thus retains their pericemental vitality for an indefinite period, or until such time as a favorable opportunity presents to transplant them into the human mouth. Let me quote him upon this point. He says: "The great and only difficulty I had to contend with was the procurement of teeth at the time they were needed. At last a way suggested itself. I applied to my dental friends for whatever good teeth or roots the exigencies of cases required them to extract. The experiment of Hunter and my own experience had taught me that teeth could be kept alive, indefinitely, in cocks' combs. But could they be transplanted to the human mouth again and made to grow there? I concluded they could, and my first experiment verified my conclusion. On November 28, 1885, a bicuspid that had been in a cock's comb for ten days was transferred to the mouth of a gentleman, where it fastened itself, as if there had been no gallinaceous period in its existence.

"Where he has not been able to procure a suitable tooth, he has taken a root and mounted an artificial crown upon it. Sometimes he used the natural crown of a tooth that had been irretrievably loosened by incrustations of tartar on its roots. In this case he simply saws off the bad root and attaches a good one to its crown by means of one or more gold screws and cement. In these cases the patient simply changes roots. He says: I have also discovered that the pericementum can be kept alive for certainly two days in warm water, temperature 100° to 110° F. He has in two cases transplanted teeth successfully that had been so kept for fifty hours."

He next describes how he was led to the discovery of the fact that teeth can be transplanted into *artificial alveoli* drilled in the bones of the jaws, and made to unite with the surrounding bony tissues and the gum. "His former practice, when he found a root was too long or too wide for the socket, was to cut off from the apical extremity, or shave off from the surface of the root, the necessary quantity to insure a fit; but so often the best portion of the pericementum was in that way removed, that he tried deepening or widening the cavity as the case required, often cutting freely into the bone in order to save all possible of this valuable pericemental tissue. And he found that adhesion took place in this portion as perfectly as in the unbroached. The consideration of this led him to the grand conclusion that artificial sockets could be drilled into bone itself and teeth planted therein as successfully as into the natural cavities."

The first operation of this kind was performed upon a young lady on June 17, 1885, and up to the month of January of the present year he reports having made the operation *seven* times in all. "Four teeth were transplanted in the mouth of one patient, and one each in three others, the original teeth having been lost for periods varying from two to twenty years. All of these are reported as entirely successful, no serious after-trouble following the operation, and the union is perfect with the jaw and the gum."

The first operation, which is a fair sample of all the others, is described as follows: "Miss W., a young lady of 24 years, had lost the left superior lateral incisor, root and all, four years previously, and had been wearing as a substitute an artificial tooth on a rubber plate. The collapse of the gum, consequent on the absorption of the alveolus, was so great, and the exposure of (artificial) gum so much, in conversation, and especially in smiling, that the falsity of the denture was immediately recognized, and was an object of great distress to her. As it was impossible, for the reasons just given, to produce an artificial substitute that would look natural, he determined upon the following operation: Taking a corresponding lateral from the mouth of a young man, which, from its awkward position, was disfiguring his appearance, he prepared it as he does all teeth used in transplantation, viz.: removed the pulp. filled the pulp chamber and root canal with Hill's stopping, and finished the apex with gold. The tooth was then placed in water of the temperature of 100° to 110° F., to cleanse it of all blood and impurities, and allowed to remain about one hour. It was then placed in a bath of bichloride of mercury, 2 parts to 1,000 of water, for about fifteen minutes, to disinfect it. The tooth being now ready, attention was turned to the patient. A hole was cut in the gum a little less than the diameter of the root to be inserted. He then took an ordinary flat, angular-edged drill, and drilled into the bone in the line of direction the tooth was to occupy. When fully deep enough, the cavity was widened and the socket formed with a cone-shaped burr. When it was found by trial that the cavity would receive the tooth perfectly, it was carefully washed and sponged, in order to remove every particle of detached bone, first with warm water, then with cold, and lastly with the bichloride solution already referred to, and when the bleeding had ceased, the tooth was introduced and kept in position by delicate silk ligatures attached to the central incisor on the right and

the canine on the left. There resulted a little swelling over the root, which remained a few days and then gradually disappeared. An accident occurred to the gum during the development of its socket. Just as the drill touched the surface of the bone, the young lady suddenly moved her head, which caused the instrument to slip forward and through the gum, making a triangular-shaped gash of fully an eighth of an inch in length. Before the tooth was inserted, the edges of this wound were brought carefully together and retained in contact by delicate silk sutures. On the fourth day the sutures were removed and no mark was apparent to tell of the lesion that had existed. In twelve days the ligatures were removed from the tooth and it was found to be well attached. About three weeks afterwards, the gum being free from any sign of irritation and the tooth comparatively firm, and as it was desirable to improve the position of the right superior central and lateral, ligatures were passed around the new tooth. This, unfortunately, set up a slight inflammatory action, and an abscess formed a few days after, and a little discharge of pus took place. The ligatures were immediately removed and the abscess treated with injections of iodine. And he says: When last seen the abscess had entirely disappeared, the surrounding gum had resumed its normal appearance, the tooth became firm in its position, and is now performing its functions in common with its fellows as though it had never been a stranger in the mouth." Dr. Younger publishes the names of several medical gentlemen, some of them members of this Association, I believe, and also the names of several dental practitioners known to the profession, who have examined these cases in a critical manner and have expressed themselves as "fully satisfied with the success and utility of this operation."

In an addendum to his paper Dr. Younger offers an explanation of the process of union, which takes place in this class of cases between the tooth and the bone into which it is placed. These views may be briefly summarized as follows: The dental alveolus has no periosteal lining, and the pericemental membrane which covers the root of the tooth—be it a single or double membrane—"has a callus generative energy" only upon that side in contact with the tooth, while the outer surface "has simply the power of forming attachment." To the *endosteum* which lines the cells and interstices of the surrounding bony tissue, he believes belongs the power of forming the alveolus about the tooth, whether the tooth is erupted by the physiological process of dentition, or artificially implanted.

To prove this theory he proposes to commence (for publication) a series of experiments upon rabbits, by drilling into various parts of their osseous tissue, and implanting roots of teeth into these cavities, and then at various intervals to kill the rabbits and make critical microscopical examinations of the existing conditions of the implanted roots and the surrounding bony structure.

. Of the immediate success of Dr. Younger's operations there cannot be a shadow of doubt, for the evidence is supported by unimpeachable witnesses. But the permanent success of the operation is not yet assured. It will require a much larger number of operations to establish its practicability, and several years to prove it permanently successful. It is to be feared that the same causes which have operated against the permanent stability and usefulness of so many teeth replanted and transplanted into *natural* alveoli, would operate against those teeth transplanted into artificial sockets, and would therefore advise that we "make haste slowly" in adopting so radical and startling an operation; but I trust these fears may prove entirely unfounded, and that the introduction of this operation may, as Dr. Younger hopes, "do away with the necessity for false teeth, and so add immeasurably to the comfort, beauty and health of the human mouth."

Next let me call your attention to the operation of

SPONGE-GRAFTING IN THE MOUTH.

This subject of sponge-grafting has for the last two or three years been receiving considerable attention by way of experimentation from specialists in dental and oral surgery; but operations in the direction of restoring lost tissue in the mouth by this means, have until lately met with very limited success. During the last year much better results have been obtained, consequent largely upon the improved methods in preparing the sponge, in protecting it against septic influences after being placed in position, and in lessening its liability to become displaced. Much greater difficulties have to be overcome in using the sponge-graft in the mouth than upon the external surfaces of the body. In the latter the usual antiseptic dressings are all that are needed to protect the sponge and wound from the entrance of micro-organisms, and to retain it in position; while in the former no such dressings can be employed, as they immediately become saturated with the oral secretions and fouled by the introduction of food into the mouth. The sponge also needs to be prepared in such a manner as to render it as nearly *permanently* antiseptic as possible, for the reasons just mentioned.

The method generally followed in preparing the sponge for grafting is that introduced by Dr. Edward Borck, of St. Louis, viz.: to remove all the earthy matter that might be contained in the sponge by placing it in dilute hydrochloric acid, and then, after washing it, to render it antiseptic by treating it in iodoform dissolved in sulph. ether, the sponges afterwards to be dried and excluded from the air by being placed in tightly corked bottles. Sponges, however, prepared in this manner, if kept for any length of time shriveled, became soft, and soon disintegrated thus rendering them useless, and making it necessary to prepare a fresh sponge for each case.

To Dr. Wm. H. Atkinson,[1] of New York, belongs the credit of suggesting an improvement in the preparation of the sponges and in the means of retaining the graft in position. He says "choose fine surgeons' sponges, free them from foreign elements," and then place in a "sterilizing solution made by adding one grain of bi-chloride of mercury to one oz. of distilled water," and then raise the temperature to 130° F. and maintain it at that degree for from ten

[1] "Transactions American Dental Association," 1885, p. 149.

to thirty minutes. He adds a word of caution in regard to the heating of the sponges, for if the temperature is allowed to go much above 130° the sponge is likely to be spoiled, for albumen begins to coagulate at 133°, and is cooked if it gets beyond 163° to 164°, and is then "not fit to be wrought into tissue." Sponges treated by this method can be kept for an indefinite period if placed in the above sterilizing fluid and excluded from the atmosphere.

The methods which he suggests for protecting sponge-grafts in the mouth from the dangers of being displaced by mastication or in cleansing the teeth, etc., is to form a splint from thin platinum plate, which shall cover the parts and be closely adapted, and at the same time free from pressure over the graft.

The class of operations in which Dr. Atkinson has been most successful, are closing the pus-pockets resulting from pyorrhea alveolaris, the reproduction of lost alveolar and gum tissue, and the healing of chronic alveolar abscesses.

Few operations in the mouth outside of these just mentioned, have yet been attempted, but there is every reason to believe that with care and skill, perforations of the hard and soft palates, the result of surgical operations, injuries, or specific disease may be successfully closed by it, and lost parts in other locations of the mouth and face, more or less completely restored by the same means.

The success of the operation, however, when made in the mouth will depend very largely upon our ability to prevent the contamination of the sponge with septic organisms. This in most cases may be accomplished by frequently and freely washing the parts with peroxide of hydrogen, followed by the bichloride solution, 1 in 1000.

Finally, allow me to direct your attention to the

OPERATION FOR HARE-LIP AND CLEFT PALATE

in early infancy, as performed and strongly advocated by Dr. D. H. Goodwillie, of New York. In these cases there has been a failure of union during interuterine development between the maxillæ and the lateral halves of the lip, and a cleft is the result. In this condition the anatomical relations of the parts are changed, both in form and dimensions. The maxillæ now separated cause an abnormal increase in their dimensions, and when extended forward producing a single or double hare-lip, there is also great distortion of the face.

Dr. Goodwillie's method is to replace the separated and distorted maxillæ and nose to their normal relations by *manual force* repeatedly applied. But in order to accomplish this with the least difficulty, it must be done as soon after birth as the conditions and circumstances surrounding the child will permit, and before ossification has had time to advance. When the bony frame-work has been restored to its anatomical position, then the operation on the cleft lip and soft palate should immediately follow. For the operation of staphylorraphy and uranoplasty the child is etherized and confined in a metallic jacket and head rest. The patient is then placed in a good light, and in such a position that the surgeon standing with the head of the patient against his breast, can, by looking over, command a full view of all parts of the palate. The arms of the operator rest upon the head of the patient and thus enable him to control his movements. The oral speculum is then placed in position and the assistant holds down the tongue by means of a hollow tongue-holder and etherizer combined, through which anæsthesia is maintained during the operation. This is a very great advantage, as it saves valuable time, which is otherwise lost by frequent halts in the operation to reapply the anæsthetic.

The divided uvula is then seized with the forceps, and with the small pointed knife the edges of the cleft are pared from the uvula forward to the anterior point of the cleft. The ligatures are then passed, beginning at the posterior part of the cleft, by means of a hollow needle and holder, armed with silk-worm gut; the point of the ligature is then pushed through the needle and grasped by the forceps and the needle withdrawn. The ends of the ligature are secured temporarily by means of small leaden clamps; this is repeated until the required number are passed. The ligatures are afterwards tied with the fingers, commencing, as a rule, with the posterior one.

If any point appears to be unduly strained by the ligature, a suture-pin clamp is adjusted to relieve the the tension upon the sutures and is allowed to remain until union has taken place. The methods of dividing the levator palati and palato-pharyngeal muscles as those in common practice.

In uranoplasty, the soft tissue covering the hard palate is either lifted from the bone by means of periosteal elevators, or lateral incisions are made through the soft tissue and the bone drilled and split, and afterwards brought together and held in position by ligatures and clamps, which are permitted to remain for from six to twelve days.

To prevent the child from getting the hands to the mouth, leather elbow-pads are strapped upon the arms.

The instruments used for these operations by Dr. Goodwillie are of his own designing, and meet a long-felt want on the part of oral surgeons, and convert an otherwise tedious and disagreeable operation into one of comparatively slight inconvenience.

ORIGINAL ARTICLES.

THE VALUE OF THE KNEE-PHENOMENON IN THE DIAGNOSIS OF DISEASES OF THE NERVOUS SYSTEM.[1]

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Since the simultaneous publications of Erb[1] and Westphal,[2] in 1875, on this subject, the knee-phenomenon has attracted a great deal of attention on

[1] Read before the Medical Section of the American Medical Association, May 5th, 1886.

[1] Archiv. Psych. und Nervenkrankheiten, V, 792.

[2] Ibid., 803.

the part of the profession, both as to its nature and its clinical significance. Erb termed the phenomenon the patellar-tendon reflex; Westphal the knee-phenomenon; while the English usually speak of it as the knee-jerk. Each of these terms is in common use, signifying alike the contraction of the quadriceps femoris muscle and the forward jerk of the foot, when a sharp blow is struck upon the *ligamentum patellæ*.

The question of the nature of this phenomenon need not detain us long. The views originally expressed by Erb and Westphal still divide the opinions of the profession. Erb believes it to be true reflex action, a peripheral impression being conveyed to the centre in the spinal cord, and thence a motor impulse transmitted to the muscle. Westphal believes that the contraction of the muscle is due to the direct irritation of its fibres, caused by their sudden stretching, the spinal cord having no cognizance of the act. He believes, at the same time, that certain conditions of the muscle and tendon are necessary; that is, a degree of muscular tonus, and a certain tension of the muscle and tendon, as well as a capability of free vibration of the tendon. The muscular tonus is maintained, in a reflex way, by the cord. The phenomenon is, therefore, affected by the condition of the cord, though it is not a true reflex act.

I will not occupy your time by giving the argument *pro* and *con* for either of these views. Neither can be said to be fully established, but that of Westphal appears to find most adherents at the present time. In either case it is true that, for a normal appearance of the phenomenon, a normal condition of the spinal centres and of the nerves emanating from them is necessary. Destruction of the lumbar portion of the cord, or of the nerves leading to or from it, will abolish the phenomenon.

The phenomenon gained its clinical significance when Westphal pointed out, as he did in his first publication, that it could be elicited in health, and that it was always absent in typical cases of locomotor ataxia. Its great diagnostic value is attached to the fact of its early disappearance in this disease, being, probably, often the first sign of disease. The phenomenon may also be abolished in anterior poliomyelitis, affecting the lumbar portion of the cord, and in neuritis, when the nerves issuing from the same part are affected, for in such instances the reflex loop is impaired upon whose integrity the normal manifestation of the phenomenon depends. It is also frequently abolished in cases of diabetes mellitus, and has been found temporarily absent in chronic alcoholism and subsequent to attacks of diphtheria.

Is its absence always of pathological import? The investigations which have been made to determine this question have differed considerably in their results. Berger examined 1409 healthy persons, including 900 soldiers, and failed to elicit the phenomenon in 22, or 1.56 per cent. of the cases. Eulenberg found it absent in 4.8 per cent. of healthy adults examined by him, and in over 5 per cent. of children. Bloch[3] examined 694 school children and found it absent in five of them. While these figures represent the phenomena as absent in a small, but still respectable, number of apparently healthy persons, Pelizaens[4] examined 2403 school children, and though he failed to elicit the phenomenon at first in six, finally succeeded in eliciting it in all but one, in whom it was subsequently obtained by a special manner of examination;[5] and Jendrassik[6] examined 1000 persons, chiefly adults, with no manifest disease of the nervous system, and only failed to elicit the phenomenon in a single person, that being a case of diabetes mellitus.

In view of the considerable difference of the results of these various observers, I have deemed the matter of sufficient importance to institute further examination in this direction, the report of which is embodied in this paper. Not all the persons were examined by myself; many were examined by medical friends at my request, especially the insane cases. For the latter I am indebted to Dr. Richardson, of the Athens Asylum, Drs. Clara M. Ellsbury, Frank B. Wynn, and Crumley, of the Dayton Asylum, Dr. F. W. Harmon, of Longview Asylum, and Dr. O. Everts, of the Cincinnati Sanitarium. But in all instances, excepting those at Athens and two other insane subjects, I examined personally the individuals in whom the phenomenon was said to be absent.

The whole number examined was 2106, of whom all were adults. Of these, 1174 were inmates of insane asylums Of the 932 remaining, 100 were patients in the medical wards of the Cincinnati Hospitals, and the others were, chiefly, men in apparently good health, inmates of the work-house, old men's home, on the police force, etc. All examined were males, excepting 275 women in the Dayton Asylum, who were kindly examined by Dr. Clara M. Ellsbury. Of the 2106 persons the knee-phenomenon was missing in twenty-eight. Five of these had fully developed locomotor ataxia, twelve were still in the earlier stages of the same disease, while in the eleven remaining there were no other symptoms of disease ot the cord.

We will speak of the cases of insanity separately, because, as Westphal has shown by the report of some cases with post-mortem examination,[7] the absence of this phenomenon in such cases is in itself strong presumptive evidence of the existence of disease in the posterior column of the cord, and because of the special value of the absence of this phenomenon in diagnosing the form of insanity. I had been of the opinion from previous observations that, in obscure cases of mental disease, the absence of the knee-jerk should direct our attention toward general paralysis, and that it would have some weight in establishing the diagnosis of this disease. This opinion is supported, though not very strongly, by the results of these examinations.

Of the twenty-eight persons with abolished knee-jerk, twenty-three were cases of insanity, and of these ten were cases of general paralysis, two were still doubtful cases, perhaps general paralysis, and eleven had other forms of insanity, mostly dementia of

[3] Ibid., XII, 471.

[4] Ibid., XIV, 402.

[5] Neurologishes Centralblatt, 1886, No. 3.

[6] Ibid., 1885, No. 18.

[7] Berlin kl. Woch., 1881, No. 1, and Archiv f. Psych. u. Nervenkrankheiten, xij, 772.

many years' duration. So only about half of the entire number are cases of general paralysis, but when it is considered that at the time there were only a few cases of general paralysis in the asylums beyond the number here included, while there were over 1100 with other forms of insanity, the significance of these figures becomes much greater. Its diagnostic value becomes still greater when another clinical manifestation is considered with it, that is, the condition of the pupils.

In both locomotor ataxia and general paralysis there are often peculiar changes in the pupils, termed the Argyle Robertson phenomenon, or reflectory rigidity; they do not contract when light is thrown into the eyes, but contract during the act of accommodation. Moeli, Thomsen and Siemerling[8] found in 4000 insane persons 492 with rigidity of the pupils, 85 per cent. of whom had general paralysis.

Of my ten cases of general paralysis with absent knee-phenomenon, nine had pupil symptoms; of the two doubtful cases such symptoms were present in one, while they were only present in two of the other eleven patients.

If we can draw any conclusion from such a small number of observations we may safely say that, in an obscure case of mental disease, if the history would not oppose the diagnosis, the absence of the knee-phenomenon is some indication that the disease is general paralysis, and the additional presence of rigidity of the pupils makes such a diagnosis highly probable.

In the 932 non-insane persons there were five with abolished knee-phenomenon. Of these, two had other symptoms of locomotor ataxia; one was an old man of 94, with considerable degeneration of all the tissues, and only two were apparently healthy. One of these was a colored man of 39, who had had a venereal sore, and suffered occasionally with pains about his trunk of an aching character, but had no other symptoms and was apparently in perfect health. The second was a man of 25, who stated that he had never had venereal disease, and was apparently in perfect health. Both were inmates of the work-house. Thus, in 929 persons only two had no knee-phenomenon. It is possible that in these there is some incipient disease of the cord, but whether this be true or not the number is so insignificant that, especially when we compare the results here obtained with those of Jendressik, we may boldly state that the absence of the knee-phenomenon is almost a pathogenic sign of disease, that disease being usually sclerosis of the posterior columns of the cord, locomotor ataxia.

That the phenomenon is sometimes absent in other pathological conditions, scarcely detracts from its diagnostic value, for the other conditions can usually be distinguished. Anterior poliomyelitis can not be confounded with locomotor ataxia. Neuritis is often only a partial manifestation of locomotor ataxia. Diabetes mellitus and alcoholism scarcely need mention in this connection. Diphtheria occurs chiefly in children, where the question of locomotor ataxia scarcely arises; yet it might occasionally, in cases of adults, be a source of confusion, as the knee-phenomenon is sometimes abolished without any diphtheritic paralysis, but it would reappear in time.

It does not appear to me that the phenomenon is as frequently abolished in diabetes mellitus as the results of some observers would lead us to infer. Rosenstein[9] missed it in six of nine cases, and Bouchard[9] in nineteen of sixty-six cases of diabetes mellitus. But I have recently had an opportunity to examine five cases, and found it present in every one of them. In one the phenomenon was very slight, but in this patient the presence of the peculiar lightning pains of locomotor ataxia, a considerable anæsthesia and greatly impaired gait make it very probable that there are structural changes in the cord.

The absence of the knee-phenomenon in chronic alcoholism is probably very rare. I examined 404 men in the work-house, many of whom are hard drinkers. I also examined quite a number of cases at the hospitals. In none of these was the phenomenon absent, although in two, at the Cincinnati Hospital, it was very difficult to elicit. It is said that in such cases the phenomenon is only temporarily abolished, and can be restored by the administration of strychnia, but this remedy has no such effect in locomotor ataxia. I have seen several cases of the latter disease, in consultation, in which strychnia had been administered, the knee-phenomenon, nevertheless, remaining absent.

We may then judge from the foregoing how significant is the absence of the knee-phenomenon, and how much it may aid us in diagnosing incipient locomotor ataxia. But in order that it should possess so much value, that it may not altogether mislead us, our examinations must be made carefully, and the phenomenon not pronounced to be absent when it can really be elicited. I have again and again had persons presented to me with the statement that in them the knee-jerk was absent, where I easily succeeded in eliciting it. Especially has this been true of physicians themselves, and in many instances it was with a sense of relief that they learned that their self-observations had been incorrect. Such errors are so common, and might be so misleading, that it is well to speak somewhat at length of the methods of examination.

The ordinary mode of examination, striking upon the *ligamentum patellæ*, while the subject is sitting with one knee crossed over the other, will suffice in most instances, for usually the phenomenon is easily elicited. But it is sometimes difficult to elicit, either because the subject can not altogether relax his muscles, or from mechanical difficulties, or from no assignable cause. Even in the same individual the phenomenon, while easy to get sometimes, may be very difficult to elicit at others. In such instances the individual should be seated on a table with the legs dangling, and the knee entirely bare, and then the patellæ tendon should be struck upon every part. The best instrument, in my experience, is the inner edge of the hand. In this manner the phenomenon can be elicited in the great majority of healthy persons. Perhaps the failures to be expected are prop-

[8] Berlin. kl. Wochensch., 1886, 37.

[9] Ibid., 1885, 113.

erly represented by Berger's results, who failed to get the phenomenon in $1\frac{5.6}{100}$ per cent. of his cases.

But Jendrassik has quite recently suggested a method of examination which reduces this relatively large per centage to almost zero. This method enabled him to find the phenomenon in all of 1000 persons except one; it was the means of obtaining the phenomenon in the one child of the 2403 children examined by Pelizaeus, in whom it could not otherwise be obtained, and it enabled me to obtain the results reported in this paper. The method is as follows: The individual, seated as above, is requested to link the bent fingers of one hand into those of the other and pull energetically. During this effort the examiner strikes the patellæ tendon. The effort heightens the muscular tonus, or increases the tension of the muscle and tendon, and makes the knee-jerk more marked. In sixteen of the 1000 examined by Jendrassik he was unable to obtain the phenomenon by the ordinary method, in fifteen of whom he easily obtained it by his own method. In my own examinations I succeeded in quite a number of instances in getting the knee-jerk with Jendrassik's method when I could not do so otherwise. Indeed, so striking was the difference in some instances that it occurred to me that this method might enable us to get the phenomenon in locomotor ataxia. For that reason I again examined a number of cases of that disease in which I had previously pronounced it absent, but in all of them, notwithstanding Jendrassik's method, the phenomenon still remained absent.

Jendrassik states that in his 999 cases he obtained the knee-jerk easily by his method. This was not my own experience. In some instances it was very slight and obtained with difficulty. Whether such a result always has a pathological significance I can not say. In some of these instances the persons examined seemed to be in perfect health; in others there were other manifestations of disease. The latter is especially true of some cases in my case book, and not included in this report, in some of whom there is undoubted locomotor ataxia, in its early stages; in others there is some reason for suspecting the presence of the disease.

Is the knee-jerk always absent in locomotor ataxia? Westphal stated in his earliest publication that it is always absent in typical cases, at least when the disease involves the lumbar portion of the cord. As the disease generally begins in this part, the loss of the phenomenon is usually its first manifestation. Since Westphal's publication, various cases have been reported in which the phenomenon remained present. Hirt[10] recently reported a case in which the phenomenon remained during life, and the post-mortem examination revealed the characteristic changes in the cord; but he was unable to state from the examination of the fresh specimen whether those parts were affected, whose disease Westphal believes to be accountable for the absence of this phenomenon. Westphal[11] has shown in a case of his own that a skin reflex action may sometimes simulate the patellar tendon reflex, and cause us to suppose the latter is present when it is really absent; but he also has reported two cases in which the phenomenon was still present after the ataxia gait was fully developed, and only disappeared in a very late stage of the disease.[12] But such instances are rare, so rare as to very little invalidate the worth of the phenomenon. I have seen quite a number of cases of this disease, and in only one of them was the knee-jerk in its normal condition. This case (which I reported in the *Journal of Mental and Nervous Diseases*, 1884), was not one of typical locomotor ataxia. There was considerable muscular atrophy, and the whole appearance of the case was that of a diffused myelitis, rather than of a systematic disease of the posterior column. In several other cases now under observation the phenomenon can be obtained slightly on one side, but in none of these has the disease advanced to the stage of ataxia.

In conclusion, we may summarize our results by saying that if, in any person, with no other assignable cause, we find an entire absence of the knee-phenomenon, we should look for other symptoms of locomotor ataxia, and if any other symptoms are presented the diagnosis is assured. But before pronouncing it absent the patient should be carefully examined, especially by the aid of Jendrassik's method. In some instances it would even be well to examine several times before pronouncing a final verdict, partly because there is sometimes such difference in the degree of response at different times in the same individual, partly because an unrecognized attack of diphtheria, or the like, may have caused its temporary disappearance.

It was my intention to speak also of the significance of excessive tendon reflexes, but on account of the length the paper has already assumed, I must forego further consideration of the subject.

In addition to those already mentioned in this paper, I am indebted to Dr. Kiely, Physician to the Work-house, Drs. Armstrong, Isham, and Dun, who are at present examining the city police, and Dr. B. F. Clark, Surgeon to the C., H. & D. R. R. Co., for valuable assistance in collecting the material here utilized.

[10] Ibid., 1886, 153.
[11] Archiv. f. Psychiat. u. Nervenk., XII, 798.
[12] Neurologisches Centralblatt, 1886, No. 6.

INTUBATION OF THE LARYNX FOR DIPHTHERITIC CROUP.[1]

BY FLETCHER INGALS, A.M., M.D.,

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Some time ago I reported two cases of intubation of the larynx in children less than 3 years of age, both of which proved very satisfactory at first, but both died within two days. Shortly after that report I introduced the laryngeal tube in a child about $5\frac{1}{2}$ years of age, There was immediate relief from dyspnœa; the child expressed herself as thankful that it had been done; the friends and the attending physician (Dr. Creighton) were all much pleased, but the

[1] Presented to the Chicago Medical Society, June 21, 1886.

child sank and died of diphtheritic bronchitis within thirty-six hours.

Recently I have had two more fortunate cases, which have led me to believe that ultimate success may be due largely to the subsequent treatment. *Case IV*, the first of these, J. R., was a little girl 4 years of age, to whom I was called by Dr. E. Garrott on May 26. The child had suffered from a "bad cold" for five or six days, and had been croupy for forty-eight hours. When Dr. Garrott first saw it there was labored respiration, with recession of the chest walls with each inspiration. He sent for me as soon as possible, and we at once decided that intubation or tracheotomy would be necessary. I introduced the laryngeal tube without delay, and shortly afterwards the patient coughed up quite a large piece of false membrane. We directed that the child should be fed on soft solids and that fluids should be withheld as far as possible. We prescribed calomel, which was given in doses of from ½ grain to 1 grain every two or three hours for the next three days.

Whenever any fluid was given it was by the half teaspoonful, and we finally found that this could be swallowed slowly as the child lay on her side without exciting cough. She was allowed all the ice she wished to quench thirst. There was considerable fever for two or three days, the temperature running between 102° and 103° F., but on the fourth day this had nearly disappeared. During this time mucous râles had been abundant over the whole chest. At the end of the fourth day the child triumphantly displayed to her friends the tube which she had just extracted by her own efforts, without cough, remarking that she knew she could get it out. There was no difficulty in breathing subsequently, and at the end of the sixth day the patient appeared perfectly well. In this case expectorants were given beneficially during a part of the treatment, and moderate doses of calomel were given for the first three days. The voice became natural about twenty-four hours after the tube had been expelled.

Case V.—On June 3 I was called by Dr. Lilly to see a little girl, I. D., 4 years 8 months old, suffering from diphtheritic croup. The child had been sick forty hours, having been taken with difficult breathing during the middle of the day. When I first saw her there was great dyspnœa, with lividity of the face and recession of the chest walls; the symptoms indicating speedy death. As Dr. Lilly was obliged to leave the city I was asked to take charge of the case. With the assistance of Dr. E. Ingals I easily introduced the tube, which gave the patient immediate relief. I directed that not more than a half-teaspoonful of fluid be given at any time, and this very seldom. Soft solids were ordered and the child was allowed to suck ice when she wished it to quench thirst. My directions as to fluids were not thoroughly carried out in this case, and to this fact I attribute some of the subsequent trouble; for every time fluids were taken cough was excited, showing that some of it passed into the trachea. I at first prescribed hydrarg. chlor. mite, gr. i every second hour, and a 1-grain tablet of quinine and chocolate every fourth hour.

Twelve hours after the tube had been inserted I found the respiration easy, but the temperature was 104° F. in the axilla. In the evening of the same day, twenty-four hours after the tube had been inserted, I found the patient in a most critical condition. Sonorous and sibilant râles, and that ominous dry tubular respiration which we have often heard after tracheotomy, were to be found all over the chest. The patient was extremely restless, face becoming livid, pulse irregular, rapid and very feeble, respiration imperfect and sighing, urine scanty, and the temperature in the axilla 104⅘° F. Indeed, she presented all the symptoms of the last stage of diphtheritic bronchitis. I have observed such symptoms frequently, but never before have I seen the patient live more than three or four hours after they had become as marked as in this case. In this emergency I ordered respiratory and cardiac stimulants, prescribing tinct. nucis vom. m i, ammon. carb. gr. i, syr. ipecac m xii, and potass. acetate gr. iv, in syr. glycyr., every second hour, to be given alternately with the powders of the mild chloride.

The next morning the breathing was somewhat improved and the temperature 104° F. The pulmonary signs were a little better, but not at all satisfactory. I then discontinued all other medicines and ordered tinct. nucis vom. m i, ammon. carb. gr. i, potass. acetat. gr. iv, and syr. ipecac m xxiii, in syr. glycyrrhizæ, to be taken every hour. The relief obtained from this medicine was very pronounced. During the afternoon of the second day, forty hours after the tube had been inserted, it was coughed out. I saw the child about an hour later and found considerable difficulty in inspiration, with some recession of the chest walls. I could not reintroduce the same tube without using too much force, but I had no difficulty in inserting the next size smaller, which at once relieved the stridor.

In the evening the patient was much better and moist râles could be heard over the whole chest. The next morning the temperature was 101⅘° in the axilla.

On the fourth day after the first intubation the second tube was coughed up, but there was no necessity for its reintroduction. The child talked in a whisper, less distinctly after the tube was expelled than before. From this time on the child improved, though the signs of diphtheritic bronchitis continued. The medicines were gradually withdrawn, though they had to be given again on two or three occasions when the cough became dry.

At the end of a week the bronchi of the left lung had been mostly cleared, and the child appeared to be nearly well. On the thirteenth day I noticed the first improvement in the voice. On the eighteenth day the voice was still weak, and bronchial râles had not entirely disappeared, but otherwise the child appeared perfectly well.

Though in this case there had been no appearance of diphtheritic membrane in the fauces, there was no doubt about the membranous character of the disease; besides, its true nature was partially proven by the fact that the child's little nurse came down with diphtheria during her illness.

These cases illustrate the necessity of great care

in the subsequent treatment after intubation for diphtheritic croup. We must not forget that we have to deal with a serious disease even though the larynx may be kept open. We must not forget the danger from the entrance of food or fluids into the trachea, and we must use every possible precaution to prevent it. If we analyze the reports we find that a very large percentage of the cases of intubation of the larynx have died of pneumonia, and this was undoubtedly due largely to the entrance of foreign substances. I believe that when we attend carefully to the administration or non-administration of food and drinks, and when we promptly meet the indications for expectorants and cardiac and respiratory stimulants, we will be able to save a much larger percentage of cases than shown by the present history of the operation.

The admirable paper just presented by Dr. Waxham shows that the results of this operation even now are quite as good as those of tracheotomy for young children. When we consider the ease with which this operation may be done, its freedom from danger, and its good results, we must consider any one grossly culpable who would allow a child to die from croup without giving it a trial. As parents and friends will readily consent to this operation though they would not to tracheotomy, it will be a means of saving hundreds of lives which would otherwise be sacrificed. When we look over the record and reflect that of the cases already saved by this method probably not 5 per cent would have been saved in other ways, and as we look into the future and see the immense possibilities of this operation, we must not forget our debt of gratitude to Dr. O'Dwyer for his invention, and to Dr. Waxham for his enthusiastic employment of it; but most of all to the profession at large, which tolerates no secret methods, but generously donates to mankind every improvement in the healing art.

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THE TREATMENT OF ASIATIC CHOLERA.[1]

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Nearly two years ago, in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (Vol. III, No. 6), I called attention to a proposed method of treating Asiatic cholera, in which the injection of large volumes of warm distilled water into the areolar tissue, at convenient points and at short intervals, and the use of hot water drinks acidulated with sulphuric acid, were the leading features.

In May of last year, at the annual meeting of the Missouri State Medical Association, when the treatment of this disease was under consideration, I again took occasion to express my confidence in the method, and my growing belief that I had suggested what may at least be deemed a reasonable plan of treatment of the disease in question.

At the time of my first publication I believed the treatment proposed by me to be entirely new; but the publication eliciting comment from various learned sources, drew from Dr. George A. Staples, of Dubuque, Iowa, some information on the subject unknown to me before, and which led to the inference that while my plan of treatment was *mainly* new, it was not *wholly* so.

In the article by Dr. Staples referred to, and which appeared three weeks after my publication, the doctor in a spirit of the utmost kindness shows that in 1883, and again in 1884, Prof. Samuel, of Königsberg, Prussia, published a brochure on "Subcutaneous Infusion as a Method of Treating Cholera," in which he says that during an invasion in 1866 he "repeatedly injected substances into the calves and epigastrium." He does not name the substances used, nor does he give the result. In a subsequent publication in the *Berliner Klinische Wochenschrift*, in 1884, the same writer reiterates his views, which seem to favor subcutaneous medication, and relates a case in the hands of another practitioner, Beigel (*Lancet*, II, No. 13, p. 352), in which, there being "complete collapse," hypodermic injections of warm water to the extent in all, at first, of seven ounces, were made into the calves, thighs, and arms. Some improvement following the measure, Beigel made two further attempts, but the patient finally succumbed.

These publications, which, so far as is known, had never been translated into English, had escaped the observation of the writer up to the time when his publication in THE JOURNAL was made, and he must be excused, therefore, for not having made mention of them. So ill-defined, however, were the ends sought, and so inadequate were the means used in these cases, that the treatment adopted seems to have been almost without purpose and without hope, and certainly without that vigor of execution that is born of strong conviction.

Practically, at least, my claim of having suggested a new method of treating the disease is for the present unchallenged. The hypodermic use of many "substances" has long been practised. The "substance" in the case cited was warm water, given "in all" to the extent of seven ounces only. After this two further attempts were made on the same patient, but the quantity of water used is not stated. It is only said that the patient finally succumbed. *Sed hæc hactenus.* The writer would avoid the imputation of having set up false claims to originality in this respect, and therefore gives the facts as cited by Dr. Staples; but those who have read the paper in No. 6, Vol. III of THE JOURNAL, will readily see, perhaps, that the writer's claim to originality does not need a chronological basis.

In view of the fact that another visitation of cholera may be expected soon, and the great fatality that has hitherto attended the disease under all kinds of treatment, the writer will probably be pardoned if he again urges his views for trial when the opportunity shall come.

I would advise the following plan of treatment to be pursued, with *watchfulness and stern determination: All* cases in their incipiency, and *mild* cases throughout the attack should be treated with opiates

[1] Read in the Section on Practical Medicine, at the Thirty-Seventh Annual Meeting of the American Medical Association.

and astringents, and *hot* water acidulated with sulphuric acid should be allowed, and urged upon the patient, to the utter exclusion of ice, ice-water, and all ice-cold drinks. The abdomen should be covered with a large mustard poultice and bandaged.

In a more advanced stage of the disease, and in all severe cases from the outset, no time should be wasted with opiates and astringents. They cannot now be of any advantage, and may do a great deal of harm. Collapse is imminent, and the hot drink should be given more assiduously than before, and repeated again and again, if the stomach shall seem to reject it, with the hope of maintaining the normal temperature of the stomach, at least, and assuaging the painful retching. Ice and ice-cold drinks, contraindicated in all stages, are most hurtful in this, and however grateful to the patient, and however eagerly craved, should be rigorously excluded, as tending to cause, or aggravate an already existing algid condition.

It is at this juncture that the physician with only the ordinary resources at command begins to feel his helplessness. "Is there no remedy that repeated trial has not condemned as worthless?" he says to himself, silently and hopelessly. The blood is losing its serum, the patient's voice is growing husky, his mind is growing indifferent, his extremities are growing cold, his skin is growing livid, his blood is growing thicker, capillary circulation is being suspended. The fluidity of the blood must be maintained, or restored, the brain and nerve paresis overcome, or death will speedily ensue.

Now, without having an opportunity of giving the plan a trial, the writer ventures to suggest that the most rational treatment in such a case would be to *flood* the circulatory system with pure water to which a little common table salt has been added—24 grains to 16 ounces of distilled water. To this may be added alcohol, or, what is better, probably, a fluid drachm of tinct. cantharides, for the writer has had ample proof of the virtue of cantharides as a vasomotor stimulant, and as a remedy for the relief of painful muscular contractions in such cases, when given hypodermically. This quantity—a pint, for a single injection, in the adult, less or more according to the stage of the disease and degree of urgency, age of the patient, and amount of serum being lost.

These injections should be begun, if possible, *before sensibility has been much impaired*, and should be made at a point, or points, not distant from the head —points about the chest or neck are best—and the fluid should be injected no faster than it shall be absorbed. This operation may be repeated every hour, or less frequently, according to the demands of the case, for it must not be forgotten that this proceeding is intended to replace the fluid lost by the skin and bowels, and the amount of fluid thus thrown into the circulation is to be determined accordingly.

There is one question of great importance that presents itself—will the fluids thus injected into the subcutaneous areolar tissue be absorbed? This question, if we may judge from the tenor of the comments made on the writer's first publication, is the main obstacle in the way of many to a general acceptance of the proposed practice. Fortunately, it is a question that may be settled speedily and safely when the opportunity offers. That it will be settled affirmatively, the writer does not doubt, from results of like treatment in like adynamic states in several cases of marked gravity.

At the suggestion of the writer Messrs. George Tiemann & Co., 67 Chatham St., New York, have made a syringe especially for this purpose. The instrument has a capacity of four ounces, with three needles of different sizes, and will find ready use in many ways, as for exploratory aspiration, for the emptying of small, deep-seated abscesses, and for the injection of alcohol in large quantities in any adynamic condition.

MEDICAL PROGRESS.

TREPHINING UNDER COCAINE.—At the meeting of the Practitioners' Society, of New York, on May 7, DR C. L. DANA related the following case, the hospital notes having been taken by his house physician, Dr. J. M. Kingman: William H., single, aged 38, born in Ireland, a bricklayer, was admitted to the hospital, February 17, 1886. Examination, February 19: The patient said that his father had had fits. The patient himself had a fit about ten years ago; he fell backward and was unconscious for about twenty minutes. Otherwise he had been a well man until eight months ago. He was then hit on the back of the head by a bar, and remained unconscious for some hours. A day or so later he began to notice difficulty with his speech—a halting and stammering. He also began to notice loss of power in his legs and arms, which has remained about the same.

Dr. Dana decided to trephine the patient. The operation was performed by his late house physician, Dr. Symonds. The patient was a rather weak man, and as Dr. Dana had several times seen epileptic patients get an attack under the influence of ether, he thought it proper to try cocaine instead of ether as an anæsthetic in this case. The head was shaved, and about fifteen minims of a four per cent. solution of cocaine was injected into the skin in the region of the scar which had been left by the blow.

The injection was made deeply, so as to reach the periosteum. Subsequently other injections were made as needed. After the periosteum had been raised and the trephine applied to the bone, no more cocaine was used, as no pain was complained of. About one drachm of the four per cent. solution was employed during the whole operation, which lasted an hour and a half, including the final dressings. At first he employed an incarcerating coil of tubes, applied by the aid of an Esmarch bandage in the way described by Dr. J. W. Wright, but the bandage was so uncomfortable, and finally painful, to the patient, that it had to be removed, and the major part of the operation was performed without any incarcerating coil whatever. The operation, for several reasons, was somewhat prolonged, but the patient endured it without complaint, sitting in a chair with his head resting on his arm on a table in front of him. The incision

was made over the occipital bone on the left side, near the junction of the temporal bone, and three inches to the left of the occipital protuberance. A depressed fracture, linear, and over an inch long, was found. The anterior portion showed some loss of bone-substance, which was replaced by fibrous tissue.

A large button of bone was removed, which showed some depression of the internal table. Pieces of bone were also removed with the forceps.

The exposed dura mater did not appear to be sensitive.

After the operation the patient had one fit the next morning and two others a month later. Since then he had remained free from attacks, though taking the same dose of bromide as before (gr. xlv. daily). His mind was much clearer, his speech greatly improved, and he was able to walk alone, when before the attack he could not walk at all, except with the support of attendants.—*Medical Record*, June 26, 1886.

Aluminium Bronze in Medicine and Dentistry.—Prof. C. Sauer, of Berlin, says in regard to this substance: Aluminium bronze, which I have utilized for the under layer of teeth-plates, is entirely free from injurious oxidation. For this purpose and in teeth-straightening machines, it admits of easier manipulation than gold alloys or silver. I believe, therefore, that it might be of use in the manufacture of surgical instruments. Canulas, sounds, catheters, etc., might be made, and everything that is manufactured from silver. It is an alloy of 900 copper and 100 aluminium. It admits of almost as ready stamping and pressing as pure silver (which next to pure gold, is the softest metal), and it has besides the elasticity of steel. In form of wire, aluminium bronze possesses a power of resisting tension approaching that of steel wire. These characteristics render the aluminium bronze capable of substitution in many cases for silver, and for silver and gold alloys. I have found the melting-point of the aluminium bronze to be higher than that of pure gold, 1000° C. It may, accordingly, be made red-hot without danger of melting, and manipulated with hard solder. I solder it with from 14- to 16-carat red gold, and such solder is more capable of resisting chemical influences than the silver solder, which contains zinc. 10 grms. of aluminium bronze, in the form of a lead plate, are worth 25 pfennige (6 cents), while 10 grms. of 12-carat silver, in the form of a lead plate, are worth 1 mark 50 pfennige (37 cents); 10 grms. 14-carat gold cost 19 marks ($4.75). Aluminium bronze is one-half lighter than 12-carat silver, and almost half the weight of 14 carat gold.

For testing how aluminium bronze is preserved in the mouth, I have employed the galvanic current. Pure aluminium, with other metals, in the presence of a acid or an alkali, yields a galvanic current. Years ago, in experiments with the mouth, I found that in a combination of aluminium with zinc the latter oxidizes. In manufacturing a combination of aluminium with gold alloy or platinum, under such circumstances, the aluminium, on the contrary, decomposes. In two cases in which it was possible for me to weigh pieces of aluminium bronze placed in the mouth, under the influence of a possible galvanic current, and the pieces not being cleaned, and therefore not mechanically worn, after the lapse of four weeks I noticed no loss of weight. For instance, with a piece weighing 16 grms. I have been able to discover only a loss of 0.008, and, besides, after first weighing the piece, a screw was afterwards inserted, so a very slight mechanical loss of weight, therefore, took place. The aluminium bronze oxidizes only superficially in the mouth. There forms upon it a kind of patina, such as is formed in the weighing of plates of 14-, 16-, 18-, and even 20-carat gold. It admits of manufacture into spiral springs, plates, screws, canulas, etc., for surgical purposes. Even knives have been manufactured therefrom. A solution of corrosive sublimate of 1 to 1000 affects it superficially. For its disinfection carbolic acid is to be preferred, as it does not attack the aluminium bronze. Gold aluminium bronze acts similarly, but oxidizes to a greater extent, is softer, and not so elastic, and therefore is to be used as green gold or 20-carat gold is used.—*Therapeutic Gazette*, June 15, 1886.

Visceral Lesion or Disorder, and Mental Disease.—Dr. James Adams says: Disease, or disordered function of internal organs, it is well known, go hand in hand with well pronounced mental disorder. Although it cannot be stated with perfect certainty that these stand to each other in the relation of cause and effect, this much may, at least, be affirmed, that bodily disease or disorder not unfrequently determines the character of delusion, or the form which mental disease assumes.

Thus, the childless wife, past her climacteric, finds, as the effect of an epitheliomatous uterus, the pains which she fondly brings herself to believe are the long-looked, and wished-for, pains of labor; whilst the maniac of persecution, traces in the agonies of pain which he actually undergoes from organic visceral disease, only the cruel influences and machinations of his enemy, or the evil one, upon him.

An interesting case of delusion, stated to be the result of intestinal accumulation, was reported in the *British Medical Journal* of April 10th; a similar case has since come under my own care, a brief report of which may also prove of interest.

My patient, a married lady, is about 50 years of age. She has always been healthy, has had a family, and there is no trace of hereditary tendency to mental disease. The duration of mental unsoundness, when she came under my care, was said to be about three weeks. Its cause was stated to be anxiety in family matters. The mental symptoms had been great melancholy and depression; determined opposition when asked to do any ordinary or rational thing; obstinate refusal of food; constant restlessness; tossing her hair about and tearing it; walking about in her night-clothes; violently refusing to be dressed. She was so violent that she could not be kept in any one position for a moment. She was absolutely incoherent in conversation; had not slept for many nights; and could not be controlled.

On examination, she was found to be violent and

resistive; her hair was in great disorder; she was constantly restless, moved continuously, swaying backwards and forwards from one foot on to the other. Her breath was offensive, and had the odor peculiar to abstinence from food. She was profoundly taciturn, incomprehensive, lost, and bewildered; and absolutely refused all food, nourishment, or even water. It was found necessary, in order to support her strength, at once to administer liquid nourishment by means of the stomach-pump; and this was, of necessity, afterwards repeated three times daily. At the end of a week, all medicines and enemata given having failed to work satisfactorily upon the bowels, and it having been ascertained that the same condition of things had been in existence three or four weeks previously, examination *per rectum* was made, when a dense and hardened mass of scybala was found; it was broken up, and partially removed by means of spoon-handles; and this, followed by a renewed enema of several pints, thoroughly evacuated the lower bowel.

Up to this time, the mental symptoms had continued as they have already been described, notwithstanding also a very large amount of liquid nourishment and stimulants administered mechanically; the tongue had remained dry, coated, parched, and parchment-like; the lips and teeth were similarly coated, the former becoming dry and excoriated. But, very soon after the free evacuation of the bowels, all the worst symptoms began gradually to disappear. Consciousness and comprehension returned, and attempts were made to partake of food and nourishment naturally. These favorable symptoms have steadily gone on since; and now, the third week of treatment of what promised to be a formidable and prolonged attack of melancholia, with stupor, finds the patient calm, coherent, sensible, industrious —with, in short, convalescence perfectly established, and discharge from care imminent.—*British Medical Journal*, May 29, 1886.

COMMENCEMENT OF DROPSY AS A POINT IN DIAGNOSIS.—Apropos of the subject of dropsy, there has seemed to me to be one very good mechanical indication for distinguishing whether dropsical effusion springs from disease of the heart, or from disease of the liver, or the first local seat of the effusion. If dropsical effusion begins in the lower extremities, and proceeds to the abdomen, the evidence is fairly sound that the obstruction is direct from the heart, and that the liver is free, the stagnation and transudation being due to a failure of the return column of blood from the extreme parts. If, on the other hand, the accumulation of fluid begins in the abdomen, and extends to the lower limbs, the evidence is equally good that the arrest of the circulation is in the hepatic system. This distinction may be of moment sometimes in deciding on the question of tapping. In a case where the dropsy occurred first in the extremities, and afterward in the abdomen, it would be good practice to delay the tapping until the effect of removing fluid by puncture of the lower limbs had been carried out. But in a case where the effusion is, primarily, into the peritoneum, and afterward into the extremities, tapping the abdomen would have a prior place to puncture. The rule would run, in cases where there are ascites and anasarca: Tap for primary ascites, puncture for primary anasarca. I refer, of course, in this note to chronic ascites and chronic anasarca uncomplicated; not to special dropsies of local origin, like ovarian cysts, and not to dropsy from renal disease.— *Asclepiad*, April 25, 1886.

FATAL RESULTS FROM "SPLITING THE CERVIX."—Dividing the cervix at the external, or at the internal os, or in the intervening portion, though not long since a comparatively frequent operation for dysmenorrhœa or sterility, is now very rarely done. Most operators now turn to dilators for the treatment of cases where incision was formerly done; one wing of the army of gynecologists still fights under the same banner of mechanical uterine pathology, only in place of hysterotomes, its enthusiastic soldiers use dilators. Possibly it is only a question of time when many of the dilators will be placed in the grave beside the hysterotomes, if the teaching of men like Duncan, Schultze, and Williams prevails, and the mechanical theory of uterine disease is cast aside.

However this may be, we have been somewhat astonished to know of the mortality which Sims had from this operation. Pajot states, in a recent lecture, that he knew of at least four deaths of women upon whom Sims had performed his operation of division of the cervix, and he believes that other similar accidents happened to him. In the light of these facts, the profession is to be congratulated upon the fact that the operation has fallen into disuse.—*Medical News*, June 12, 1886.

TREATMENT OF ACUTE RHEUMATISM.—The last number of *Russkaya Meditsina* contains a communication from DR. L. GRINEVITSKI, of Rostoff-on-the-Don, who writes that for more than twenty years he has treated acute articular rheumatism with nitrate of potash, 2 drachms being given daily in raspberry syrup, and a dose administered every two hours. Together with this internal medication he prescribes an ointment for use morning and evening of the following composition: Olei hyosc., 1 oz.; ung. hydrarg. cinerei, 2 dr.; ext. acon., 1 dr. He has tried all ordinary remedies, and finds that on the whole this plan of treatment is more satisfactory than any other, being especially valuable in those cases where salicylates fail to give relief. Generally the disease is brought to an end in from one to two weeks, according to its severity and the time the treatment was commenced. When commenced at the onset of the attack, and before more than one joint was affected, the others were usually spared altogether.—*Lancet*, May 22, 1886.

TOTAL EXTIRPATION OF THE TONGUE.—DR. R. F. WEIR reports a case of true epithelioma treated by Kocher's method. The whole tongue being involved, it was drawn out and removed at the level of the hyoid bone, after the side of the mouth had been opened under the jaw. Patient was cured twenty-eight days after operation.

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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, JULY 10, 1886.

LAPAROTOMY IN STRANGULATED HERNIA.

Should the abdominal cavity be opened near the site of a strangulated hernia? Or to put the question a little differently, should we perform laparotomy instead of or with herniotomy for a strangulated hernia? Such are the questions which arise on reading the introduction to a paper on "Laparotomy in the Treatment of Strangulated Hernia," in the *Annals of Surgery*, for June, 1886, by MR. C. B. KEETLEY, of London, which may be considered the sequel to some papers, letters and cases in the British journals by MM. Pye-Smith, Fenwick and Neale. Mr. Chavasse states that Mr. Crompton, of Birmingham, opened the abdomen in the linea alba, in 1860, just above the hernial aperture of an umbilical hernia which had been acutely strangulated for seven hours. "His intention was evidently to approach the seat of strangulation from its internal or abdominal aspect. But, finding the gut gangrenous, he desisted and laid the sac open." Thirteen years ago Mr. Annandale, of Edinburgh, wrote a paper on this subject based on a case, in which he said: "The cases which appear to me to be most suitable for this operation are: 1. Umbilical herniæ in the adult, especially if the coverings of the hernia are thin or ulcerated, or the hernia large. 2. Large inguinal or scrotal herniæ which have been recently reducible. 3. Herniæ in other regions in which, owing to special conditions, the usual operation cannot satisfactorily be performed." This operation is, however, only suggested when in those forms of hernia the condition of strangulation or obstruction gives rise to symptoms which absolutely necessitate operative interference, and when signs of gangrene or a history of old standing irreducibility are absent.

The principle of this operation, says Annandale, consists in making a small incision through the abdominal wall and opening the abdominal cavity near the hernia, instead of cutting into the hernial sac itself, or exposing it. One or more fingers are then to be inserted into the abdominal cavity and the protruding structures contained in the hernial sac drawn back from within. He performed this operation in 1878, in a case in which a strangulated right inguinal hernia had been reduced *en masse*. A three inch incision was made in the linea alba, midway between the pubes and the umbilicus. "A portion of the small intestines dilated with gas immediately protruded, and on passing my finger along in a direction towards the right iliac fossa, I felt that the gut was here caught and fixed in some way. This fixed portion was easily drawn toward the wound, and it was then seen to be a small knuckle of gut strangulated by the neck of a hernial sac. This sac was entire, and its neck lay in the general peritoneal cavity, and had the appearance of being somewhat everted toward this cavity. Above the obstructed gut the intestine was dilated; below it, it was contracted and flaccid. Slight and careful traction on the intestine from within, and at the same time gentle pressure with one finger on the neck of the sac in the opposite direction, at once relieved the strangulated portion, and drew it out from the sac." This patient fell a victim to the carelessness of his friends, who allowed him to rise during the night and strain at stool. He died ten hours after the operation.

On reading Mr. Keetley's paper it is evident that the idea with which he performed the operation—which he did in 1883, before he knew of the existence of Mr. Annandale's second paper—was quite different from Mr. Annandale's and other operators, Mr. Keetley's idea being to perform laparotomy as an *aid* not to make laparotomy a *substitute* for herniotomy. Mr. Keetley does open the hernial sac, and assumes it to be opened in speaking of the operation. And Mr. Harry Fenwick published a paper, with a case (*Lancet*, Sept. 26, 1886) under the title "Laparotomy as an Aid to Herniotomy," and speaks very highly of the advisability of the operation for those cases in which the size and condition of the loop of bowel prohibits pressure or forbids prolonged exposure. Mr. Annandale's indications for the operation have already been given: Mr. Keetley summarizes his views as to the indications as follows: 1. When in hernia of any class, a constriction having been divided, very exceptional difficulty is met with in reducing the intestine. This indication more especially has force when hæmorrhage from the notch is persistent or severe. Putting aside this important consid-

eration of the prevention of hæmorrbage into the abdominal cavity, this indication must be one of extreme rarity. 2. When the hernia has been quite recently strangulated and belongs to one of certain classes, namely: (a) congenital hernia in the male; (b) umbilical hernia? In the first class of cases it is to be done as an aid to, and in the second as a substitute for herniotomy. "Under *no circumstances* would I sanction division of the constriction from the abdominal aspect, nor can I imagine how any dilating forceps could be used to stretch the ring without injuring the contents."

Mr. Keetley purposely excludes femoral hernia from the second class, because, having regard to the very dangerous character of that affection, he thinks the surgeon will do the best for his patient by cutting down upon and incising the sac. He has also excluded, but more reluctantly and with some doubts, non-congenital inguinal in the male, and both congenital and non-congenital in the female, "because the completion of herniotomy by excision of the sac, with ligature of its neck, forms so satisfactory an operation in these cases." The reasons for which congenital hernia in the male are included are obvious; all operations of excision and ligaturing in this affection are very dangerous, and usually superfluous as regards a radical cure. "Dangerous as they are, they are not superfluous when a direct herniotomy with incision of constriction, etc., is done, because then they are called for in order to isolate the wound from the abdominal cavity. There is therefore here a strong argument in favor of letting alone the sac of a congenital hernia in the male, and of doing median laparotomy when such a case is seen to be in a state of recent strangulation. The very fact of strangulation in such cases suggests a small hernial aperature and the prospect of success with mild means of obtaining radical cure ultimately." It will be noticed that Mr. Keetley has placed a "?" after umbilical hernia in his classification. This was done with the feeling that the indication for laparotomy in such cases will be very doubtful; and certainly a positive contra-indication may exist. In case of a large sac, evidently containing a large mass of omentum, and with probably a history of irreducibility for months or years, what is to be done? "Should the surgeon be content to perform a small median laparotomy and hook back into the abdominal cavity sufficient of the hernial contents to relieve the strangulation (perhaps a single small knuckle of bowel), leaving the omentum? Or should he set to work in more heroic fashion, reducing the bowel completely, cutting away omentum, sac and superfluous skin, and sewing up the hernial aperture? Keetley did the latter and the patient died; Chavasse did the former, and the patient lived. "But many a patient has been operated on in the latter way and lived, and all the other cases in which had been followed a practice resembling (but it is true not identical with) Chavasse's plan, have perished."

With regard to the technique of the operation Mr. Keetley thinks it of prime importance that the surgeon keep strictly in the median line of the body. The substitution of scissors for the knife after the skin has been divided will avoid waste of time in checking oozing and in securing and tying vessels. The scissors should not be sharp. Near the pubes it may be necessary to divide the pyramidalis from its attachment to the fascia in the middle line. It is not necessary to cut the recti in order to separate them, and it is neither necessary nor desirable to go too near to the pubes—unnecessary because the fleshy parts of the abdominal wall being movable will permit the median aperture to be pressed towards the hernial ring; and undesirable, because the farther we keep from the root of the penis the better for antisepsis. There is practically no objection to enlarging the abdominal wound, if necessary to insert two fingers instead of one. The wound should be sutured in layers: first the peritoneum, then the muscles, next the aponeurosis, both beneath and superficial to the recti if possible, and lastly the skin. Neglect of this precaution may lead to a ventral hernia. The catgut should be of the very best, and thoroughly aseptic. Of course if peritonitis were discovered at the operation the surgeon would take the opportunity to wash out the cavity and put in a drainage tube.

MORE SENSATIONALISM.

It appears that recently DR. B. A. WATSON, of Jersey City, N. J., a well-known and eminent surgeon, has been prosecuting a series of experiments on dogs for the purpose of ascertaining more accurately the effects of concussion on the spinal cord, both immediate and remote. He hoped thereby to lessen the obscurity which has hitherto existed on the subject and given rise to the expression of much diversity of opinion by medical witnesses in cases involving alleged spinal concussion from falls, blows, and railroad accidents. To imitate as accurately as possible the concussions of ordinary accidents, the dogs, under the influence of an anæsthetic, were dropped through sufficient space upon solid bodies, to be likely to produce a decided concussion. The subsequent symptoms were carefully noted for different lengths of time in different dogs the animals then killed with

chloroform, and the brains and spinal cords subjected to minute examination for ascertaining what pathological changes had been produced.

Dr. Watson conducted his experiments on his own premises and at his own expense, and so quietly that he seems not to have given annoyance to any of his immediate neighbors. But some rumors concerning the matter having reached the ears of the editors of the *Evening Journal* of Jersey City, a reporter was detailed to work the matter up in the usual sensational style. He appears to have visited the doctor's barn, and while talking with his coachman he heard some "*whinings and scratchings of dogs*," apparently on the floor above. And on this single *remarkable* item of information he founded half a column in the *Evening Journal* of June 3, with the following startling heading: "Story of Awful Cruelty—Torment Unspeakable Inflicted—A Physician in search of Knowledge puts Dogs to the Torture—A Machine for Inflicting Agony too great for Description." Of course this speedily brought upon the scene the President of the Society for Prevention of Cruelty to Animals, Mr. McAneny, and as the result Dr. Watson finds himself subjected to the expense of a legal prosecution, his motives impugned, and his character for unparalleled cruelty paraded before the public in the columns of the newspaper in the most reckless manner. It is claimed that Dr. Watson destroyed forty-one dogs in prosecuting his experiments, for which he ought to have received a vote of thanks from the whole population of Jersey City, on account of his having lessened, by that much, their chances of suffering from hydrophobia in the future. And if Mr. McAneny and the managers of the *Evening Journal* of Jersey City, had half as much regard for the character and suffering of individuals of the human species as they claim to have for dogs, they would never indulge in public insinuations or open charges of wanton cruelty and mercenary motives against an intelligent and honorable citizen until all the facts had been established by impartial investigation. It is well known to every intelligent physician and surgeon that the subject which Dr. Watson was investigating is involved in obscurity, and that every additional item of knowledge gained concerning it is of real value to the human race. Hence the public insinuation against Dr. Watson that he was practising unheard of cruelty on the dogs for the most mercenary motives in subserviency to a railroad corporation, is a ten-fold greater and more unjustifiable cruelty to him, to his family, and the profession to which he belongs, than would be the breaking of the backs of all the dogs in New Jersey.

THE SIGNIFICANCE OF THE TYPHOID BACILLUS.

Fraenkel and Simmons report, in *Fortschritte der Medicin*, No. 4, 1886, their results in repeating Gaffky's experiments as to the inoculability of the bacillus of typhoid fever. Gaffky has obtained only negative results in inoculating this bacillus in animals of different species, but Fränkel and Simmons have been more fortunate in their results. By inoculating pure cultures of this microbe in the peritoneal cavity of rabbits and mice, they have had a great number of these animals fall ill only a few hours after the inoculations—the results in the case of mice being almost constant—with apathy, anorexia, and diarrhœa; but without an internal rise of temperature. All the animals in which the inoculations succeeded died before the end of the fourth day, and on post-mortem examination the following lesions were found: tumefaction of the mesenteric glands and spleen, the spleen having the external appearance of one recently removed from a case of typhoid fever in the human being. There was also tumefaction of the follicular glands of the intestines, and often considerable tumefaction, and sometimes ulceration of Peyer's patches. The ganglia of the axilla and of the groin were also red and swollen in the majority of the cases. In a small number of cases there were hæmorrhages into the serous cavities. There was no trace whatever of inflammatory reaction at the seat of inoculation.

The microbes with which the inoculations were made were cultivated in gelatin and on potatoes at an ordinary temperature; and it must be admitted that the results of the experiments are evidence as to the pathogenic properties of the typhoid bacillus. The inoculations caused some disease in the rabbits and mice, but was it typhoid fever? Of course this is a question which must remain undecided for the present. One point especially to be noted is that the experimenters could not induce the pathological lesions mentioned in rabbits and mice by injecting the cultures into the intestines; though A. Fränkel has recently communicated a disease to guinea-pigs by injecting cultures of typhoid bacilli into the duodenum, the symptoms of which were tumefaction of the spleen, mesenteric glands and of Peyer's patches, and in one case there was ulceration of Peyer's patches. It is a noteworthy fact that Fränkel and Simmons found the typhoid bacilli in the blood and tissues of the animals which died from their experiments. They are convinced that these bacilli continue to develop in the organs after death, even when portions of organs containing them have lain in alcohol for more than two days.

CHOLERA IN ITALY.—A despatch dated Rome, July 3, states that during the preceding twenty-four hours 155 new cases of cholera and forty-six deaths had occurred in the villages around Brindisi. This indicates a decided increase in the prevalence of the disease.

THE AMERICAN RHINOLOGICAL ASSOCIATION will hold its fourth annual meeting at St. Louis, Mo., on the 6th of October next.

SOCIETY PROCEEDINGS.

THE ASSOCIATION OF AMERICAN PHYSICIANS.

First Meeting, held in the Army Medical Museum, Washington, June 17 and 18, 1886.

(Concluded from page 24.)

DR. JAMES T. WHITTAKER, of Cincinnati, read a paper on

SPASM OF THE GLOTTIS IN RICKETS.

The author emphasized the fact that this accident belongs almost exclusively to rickets and dwelt upon the value of recognition of this fact, because rickets is generally speaking a curable disease, and the spasm of the glottis disappears with the successful treatment of its cause, while treatment addressed to the larynx directly remains without effect. He quoted from a number of authorities to show that this relation between the two affections is not so universally recognized in this country and England as in Germany and France. The two latest text books in Germany, Strimpell and Sichorst, declare, one that two-thirds, and the other that nine-tenths of all cases of spasm of the glottis depend upon rickets.

Spasm of the glottis is often the first sign to unmask rickets, for the other evidences of the disease are often attributed to other causes. Thus general malaise is attributed to dentition intestinal catarrh to errors in diet, fever and sweating to malaria, bone deformities to premature efforts upon the feet, etc. Spasm of the larynx indicates the stage rather than the degree of rickets, in that it occurs mostly in cases of rapid advance of the disease and does not appear in cases of slow progress. In the spring and fall, when rickets advances in leaps, spasm of the glottis has occurred in epidemic form.

Dr. Whittaker discussed next the various theories of rickets which continue to elude investigation to a degree characterized as exasperating. But facts accumulate which go to give it place among the chronic infections. The exemption of hot climates and mountains, Iceland, the Faroe Islands, the complete immunity of Davos, notwithstanding the improper feeding and improper hygiene of sucklings at these places show that faults in diet can not be the cause of it, and the symptomatology of it fits better among the chronic infections produced by specific causes.

Spasm of the glottis in the absence of any constant lesion falls among the neuroses. The question as to the reflex of direct character of the irritation producing it, was decided after a review of the evidence in favor of the latter, and since Rosenbach has demonstrated the micro-organisms of tetanus, which often begins with, and may go no further than trismus, the maintenance of a mycotic theory, for the laryngospasm of rickets, may be adopted as the best provisional explanation. The mode of onset and character of the accident were next detailed and the symptomatology illustrated with a typical case.

The inefficacy of anæsthetics and all direct means of treatment, as by intubation, tracheotomy, etc., were mentioned next, and douches, flagellations, electricity, cold air, direct appeals to the skin on the first appearance of attack, were described as the best means of combating and more especially of preventing the attack. Cod-liver oil, and more especially phosphorous, which may be looked upon almost in the light of a specific, were considered the best means of speedily relieving the rickets, and thus removing the cause of the laryngeal spasm. It has the most favorable prognosis of all kinds of laryngospasm, as Monte lost but eight of 329 cases.

DR. A. JACOBI, stated that this was a subject in which he was much interested. As has been said, this is almost always due to rickets. Its causation may be the pressure of the enlarged glands about the neck irritating the nerve. When the rickets disappears, the spasm of the glottis disappears. The disease may be primary or secondary. In forty-nine out of fifty cases of spasm of the larynx the cause is rickets, and in forty-eight of these it is rickets of the cranium and of the meninges of the brain. When the cranium is opened we find congestion. Cranio-tabes need not be developed to any marked extent. Where we have a succulent cranium, we have succulent meninges and a succulent brain. There is meningeal hyperæmia and meningeal effusion in such cases. In regard to prognosis, if you have six weeks during which to carry out proper treatment, you may be sure that the child will lose its laryngismus stridulus, but during that time the child may die in an attack.

DR. WILLIAM PEPPER described a case of spasm of the glottis in whooping cough, in which the attacks were so severe that on several occasions, the child apparently died. Nitrite of amyl was successfully used for the relief of these attacks. It was found that a combination of one part of nitrite of amyl with nine of sulphuric ether gave the best results.

DR. JACOBI had recently used nitro-glycerine for a similar purpose. He had used it in inflammatory hydrocephalus in young infants, and I believe with fair results.

DR. EDWARD T. BRUEN, of Philadelphia, read some

NOTES ON SOME CASES OF DIAPHRAGMATIC PLEURISY.

Dr. Bruen said that the object of his paper was to briefly state the diagnostic features of a diaphragmatic pleurisy. He did not attempt a review of the interesting historical literature of the disease. He admitted that the diagnosis of this affection was often established at the post-mortem table, since the pro-

cess is often latent and frequently possessed few distinctive physical signs. Primary pleurisy of this part of the pleura he considered rare. It is oftener a complication attendant upon acute inflammatory processes in the adjacent pulmonary lobes, the costo-parietal pleura, or in the liver or peritoneum. Under the foregoing conditions, invasion of the diaphragmatic pleura may be characterized by special symptoms, which may entitle one to designate this class of cases as acute inflammation of the diaphragmatic pleura. Inflammation of this portion of pleura may be a sub-acute or chronic progress developed in consequence of contagious sub-acute, or chronic inflammation or malignant growths. In such cases the process in the diaphragmatic pleura may become specialized by symptoms which should lead the clinician to differentiate the diaphragmatic pleurisy from the associated pathological changes.

In the acute form of this disease many of the more prominent and differential symptoms may be masked by the greater importance of the primary disease. As an example, the history of a case of croupous pneumonia of the right lung was related, which on the fifteenth day became complicated with diaphragmatic pleurisy. The case occurred in the month of March, and the diagnosis was confirmed by autopsy on the twenty-fifth day after the illness commenced. The patient was delirious, yet many of the characteristic symptoms were grouped in this case, including hiccough, only controllable by rest and morphia, a somewhat diagnostic feature.

The symptoms of diaphragmatic pleurisy may also be masked if the liver be enlarged or the intestines distended with gas, for these conditions may sensibly modify the freedom of the diaphragmatic movements, and the immobility of the diaphragm, one of the prominent symptoms of diaphragmatic pleurisy may not be differentiated and assigned to its true cause; but sometimes the characteristic pain over the situations elsewhere designated and the added disablement of the respiratory function may be noticeable. Diaphragmatic pleurisy in the writer's experience was chiefly right sided.

The terminations of the acute cases are dependent upon the associated pathological processes, and the gravity of the case is not necessarily increased if the symptom of hiccough is subordinate, the latter being an exceptional uncontrollable and exhausting symptom. In primary cases, a favorable issue may occur.

A case of diaphragmatic pleurisy in a negro was related, and attention specially directed to the interference with the lymphatic pulmonary circulation, and the disseminated areas of congestion which were secondary, also to some œdematous bosses, which formed over the right hypochondriac region. These were attributed to interference with the lymphatic circulation in the diaphragmatic pleura, and the intercostal tissues on account of the suspended functional play of the diaphragm and intercostal muscles. Recovery ensued in this case at the expiration of five weeks.

To show that the diaphragmatic pleurisy may progress to a marked degree without the manifestation of diagnostic symptoms, the case of a negro man was related, in whom post-mortem examination showed lesions of general miliary tuberculosis with marked thickening of the diaphragmatic pleura. It was shown in this case that the peritoneum was infected through the connecting channel of lymphatics between the pleura and peritoneum. During life some friction râles were heard along the upper border of the fifth rib and near the margin of the seventh in the axillary line, although a large amount of fluid was contained in the chest. The autopsy showed that the lung rendered rigid and thick by the tubercular infiltration, projected as a rigid mass into the pleural space, displacing the fluid and then the separation of flakes of exudation, doubtless produced the râles. It was stated that in the sub-acute or chronic cases, the special symptoms, diaphragmatic pleurisy were more conspicuous than in many of the acute forms of the disease. Illustrative cases were cited, one occurring in the Philadelphia Hospital, secondary to the induration of the right apex and general emphysema, in which the disease was correctly diagnosticated and the post-mortem examination made. The possible variation in the symptoms was considered and then a case of congenital deficiency of the diaphragm was described. The patient was 32 years old at death and had lived twenty-four years without a symptom to call attention to the anomaly. In the latter eight years of his life, asthmatic symptoms and shortness of breath were found to be due to thickening of the pleura and to phthisis. A case of diphragmatic pleurisy reported by Dr. Tyson, without special symptoms was discussed; also one by Dr. Daland. A case published by Dr. Pepper was cited, in which certain symptoms seemed consonant with those of diaphragmatic pleurisy. The whole thickness of the diaphragm was from one-half inch to two inches. The thickening was due to a morbid growth.

The diagnosis of a disease in which there is often so little that is distinctive, must necessarily be a difficult problem. It was shown by the relation of several post-mortem examinations that the process can exist in advanced form on one side of the diaphragm, at least, without special symptoms. If the diaphragmatic pleurisy should complicate any form of pulmonary hepatic pathological process, or circumscribed peritonitis of the superior part of the abdominal cavity, one may note that the subjective sense of respiratory distress and the objective symptoms are disproportionate to those conditions, and therefore the possibility of the existence of diaphragmatic pleurisy should be considered.

The more important diagnostic symptom, which, if present, should direct attention to the possibility of diaphragmatic pleurisy, are ranged in the order of their frequency and importance as follows: subjective sensation of pain over the zone which borders the diaphragmatic plane, pain at the point described by Dr. Mussey, viz., one or two fingers breadth from the middle line on a level with the tenth rib, or at the intersection of a line drawn from the osseous part of the tenth rib and one drawn along the sternum. Dr. Mussey explains the greater pain at this point by the greater play of the ribs and consequent friction against the inflammed nerve. Whether the nerve is actually

inflammed or simply irritated, must be decided by further investigation. The pains may be constant, yet also paroxysmal or provoked by pressure, or by increased respiratory motion by irritation of the diaphragm, swallowing or vomiting, or by the pressure of the distended abdominal viscera. Radiating mains around the chest and upper abdominal zone may occur. Fixation of the diaphragm is an equally important symptom, and secondarily the enforced thoracic character of the respiration is a very striking phenomena. There will usually be feeble or absent respiratory murmur near the diaphragmatic zone. Dry or moist friction râles may be audible along the convex surface of the diaphragmatic pleura. The percussion resonance may be dull when there is much exudation, but more commonly it is tympanitic since the partial paresis of the diaphragmatic muscle permits the pressure of the abdominal viscera to raise it somewhat above its usual area. In certain cases the posture of the patient may be bent forwards with hyochondriac retraction and epigastric hollowness, but the dorsal decubitus is very often maintained. The respiration is quickened in a few cases so that there may be dyspnoea or orthopnœa, but these symptoms may be almost entirely absent in subacute or chronic cases on account of the compensatory costal respiration. Cough is a variable symptom and the same may be said of hiccough, both are often absent. Finally, in the writer's experience, diaphragmatic pleurisy has been chiefly a thickening with adhesions, rather than accompanied with much fluid effusion. Hence, the importance of noticing the foregoing symptoms, since the presence of much fluid effusion would be more obvious by means of percussion, auscultation and other physical signs.

The necessity of differential diagnosis between costo parietal pleurisy processes in the loter pulmonary lobes or pericardium were alluded to, also, perihepattis, circumscribed peritonitis in the upper part of the abdominal cavity. The exclusion of gastric ulcer and gall stones were discussed briefly and chronic pericarditis.

The prognosis was stated to be intertwined with the intercurrent pathological processes, and the power of adaptation possessed by the pulmonary system is so great that the duration, even of diaphragmatic pleurisy may be indefinite.

DR. T. MITCHELL PRUDDEN, of New York read a

DEMONSTRATION OF BACTERIAL CULTURES FROM A CASE OF MYCOTIC ENDOCARDITIS IN MAN AND OF SPECIMENS SHOWING THE EXPERIMENTAL PRODUCTION OF THE DISEASE IN RABBITS.

The communication was a preliminary one, the experiments not having yet been completed. For some years the presence of bacteria has occasionally been observed in the cardiac and peripheral lesions of malignant ulcerative endocarditis. It has, however, been found that not only, not in all cases of acute vegetative endocarditis, but not even all cases of ulcerative endocarditis present bacteria in their lesions. The speaker thought that the anatomical distinction was not clearly enough drawn between simple and malignant ulcerative endocarditis. Of eleven cases of well marked ulceration of the valves, which he had studied within the past four years, only four showed the presence of bacteria. In only one case of malignant ulcerative endocarditis was he able to isolate and study the living bacteria. This was a case of pyæmia following cuneiform osteotomy for club foot. The tests applied showed the bacterium to be the staphylococcus pyogenus aureus.

The experiments on animals were then described, and the following conclusions were drawn. If we sum up the results of combined morphological and biological examination of the cases thus far studied, we find that the sphero-bacteria found in the cardiac and peripheral lesions were the stryphococcus pyogenus and the staphylococcus pyogenus areus and albus, either alone or together.

The intravenous injection of either of these or a mixture of them into the rabbit after mechanical or chemical injury of the endocardium is capable of inducing lesions strictly analagous, if not identical with those found in malignant ulcerative endocarditis in man. The coccus sepsis of nicolain is capable of producing similar results. Neither the endocardial injury nor the intravenous injection of bacteria alone are sufficient to induce the cardiac lesion. Both are necessary.

As far as the observations go, they tend to confirm the view that malignant ulcerative endocarditis is simply one of the forms of pyæmic lesion determined by the predisposing conditions of the endocardium. Whether or not there are other forms of the disease induced by other species of bacteria or having no relation to bacteria at all, are questions which are more likely to be settled by experiment than by conjecture.

FRIDAY, MAY 18—SECOND DAY.

MORNING SESSION.

DR. W. T. COUNCILMAN, of Baltimore, read a paper on

CERTAIN ELEMENTS FOUND IN THE BLOOD OF MALARIAL FEVER.

It has long been known that changes in the blood occur in this disease. It is now known that in the red corpuscles there are certain bodies which appear to be living organisms, and these occur only in this disease. These are found by taking a drop of blood and spreading it on a slide so that there shall be but a single layer of corpuscles. These are stained with a week solution of fuchsin, and examined with a high power. The nuclei of the white corpuscles will be intensely stained, the red slightly stained, and in some of the red corpuscles will be seen brightly stained bodies of irregular shape. These exhibit distinct amœboid movements. The variety of their changes of form was illustrated by drawings. Certain hyaline bodies are also found and were described. The speaker then referred to the work of other investigators in this field. And gave a review of the results which they had obtained.

DR. HENRY M. LYMAN, of Chicago, read a paper on

TETANY.

Tetany may be defined as a more or less general-

ized, intermittent, usually tonic convulsion of the muscles of the limbs and trunk; sometimes involving the face and visceral organs, usually painful, but never attended with loss of consciousness. The disorder is functional, and is based upon no distinctive pathological lesions of the central nervous organs. It is manifested in a series of attacks which occur at intervals varying in length from a few hours to weeks or even months. These attacks are sometimes very abrupt in their onset; oftentimes they are preceded by headache, disturbances of the digestive organs, and various orders of sensation in the skin and muscles, after which the characteristic paroxysms appear. During the paroxysms the flexor muscles are usually the seat of contracture, but sometimes the extensor muscles of the limb are principally involved, so that the fingers and toes may be spread apart and extended. Sometimes the flexor muscles about the elbow are principally involved. Single muscles alone may be attacked. These contractions may be very energetically developed with considerable pain, or they may be sluggish and painless. The pain is usually due to the muscular spasm, but neuralgia may be associated with the cramp and the skin may sometimes become inordinately sensitive. The pain may at other times become located about the joints, which then present the characteristic appearance of rheumatism. Diminished sensibility in certain parts of the body may be sometimes observed during or after an attack. The special senses are rarely disturbed. The action of the heart is seldom changed except by transient palpitations; and only when the respiratory muscles are involved in severe cases is there any difficulty in breathing. A febrile movement is only remarked when inflammatory complications are present. Electrical tests indicate an increased excitability of the motor nerves which may sometimes even include the facial nerves.

The disease is rarely fatal, although death has occasionally resulted from prolonged spasm of the respiratory muscles. The duration of the disorder is quite variable and relapses are rather frequent.

Having no relation with any particular lesion of the nervous centres, tetany appears to be dependent upon a functional instability of the nervous and muscular organs. This instability is usually the result of diseases that affect the organs of digestion and the processes of nutrition. Congenital weakness, and the period of debility that precedes or follows any acute disease may then afford occasion for the manifestation of this particular disorder.

The principal diseases with which tetany may be confounded are, tetanus, organic diseases of the brain and spinal cord attended with contracture, epilepsy, especially the so-called cortical or Jacksonian variety, professional cramp and spasmodic phenomena of ergotism.

The treatment must be directed in a general way against the fundamental instability of the individual constitution. Mild attacks require no special therapy, but severe attacks often demand the energetic use of narcotics and anæsthetics for their relief.

Dr. John T. Carpenter, of Pottsville, referred to the association of tetany with septic poison. He described a case in which this association was quite distinct, and in studying his cases of tetany, particularly of the milder variety, he thought that he was able to trace them to septicæmia

Dr. A. Jacobi thought that in a large number of these cases there was reason to believe that there was meningeal hyperæmia. An occasional cause which has not been mentioned, is masturbation; this he had seen in one case in which the attacks always followed masturbation, and had not occurred before the age of puberty.

Dr. Reginald H. Fitz, of Boston, read a paper on

PERFORATING INFLAMMATION OF THE VERMIFORM APPENDIX; WITH SPECIAL REFERENCE TO ITS EARLY DIAGNOSIS AND TREATMENT.

The paper was based upon an analysis of 257 cases of unquestionable perforating ulcer of the appendix, and of 209 cases diagnosticated as typhilitis, perityphilitis and perityphilitic abscess. In the latter series the diagnosis was clinical not anatomical.

The important features in the etiology of appendiciti were considered also the limitations as to sex and age. It was found that the disease occurred most frequently among previously healthy youths and young adults, especially males, that a fæcal concretion or foreign body was present as a local cause in more than three-fifths of the cases. Attacks of indigestion and acts of violence, especially when indirect, were exciting causes in one-fifth of the cases. The action of these causes was favored by a constipated habit, or by congenital or acquired irregularities in the position and attachment of the appendix.

The first characteristic symptom of a perforating appendicitis was found to be a sudden severe abdominal pain. This occurred in eighty-four per cent. of the cases, and usually in the right iliac fossa, where tenderness could always be found, even when the pain was referred to some other locality. The pain was attributed to the actual perforation or the detachment of fresh adhesions.

Fever was the next characteristic symptom and occurred in the course of twenty-four hours. Finally came the swelling which made its appearance in the course of three days.

The chief source of danger from the appendicular peritonitis arose from its becoming generalized. Such a result followed most frequently between the second and fourth days. More than two-thirds of the patients died during the first eight days, and two-thirds of these between the fourth and eighth days inclusive.

The question of a differential diagnosis was then discussed. The determination in resolution was referred to. It was considered to take place in about one-third of the cases as approximately determined from the recorded cases of typhlitis and perityphlitis. Even resolution might be undesirable, since the number of cases of recurrent disease is considerable and might have been prevented by appropriate treatment.

The reader recommended at the outset the opium treatment with rest and a liquid diet, the food being given in small quantities, frequently repeated. If it became evident that general peritonitis was imminent at the end of twenty-four hours after the sudden in-

tense pain, the appendix should be exposed and removed. Usually the symptoms were not so urgent that the appearance of the swelling could not be awaited. Although Willard Parkes advised that the abscess might be opened as early as the fifth day, the practice has been to operate at a later date; 47 per cent. of the cases were operated upon in the second week and 26 per cent. after the third week.

More favorable results in the future were to follow the earliest possible opening of the swelling. This in most instances was at the outset a sac formed by a circumscribed peritonitis. It was usually present on the third day of the disease, dating from the pain, its first marked, characteristic symptom. Negative results from a diagnostic puncture did not contraindicate the operation.

DR. WILLIAM PEPPER related two cases which bear upon this point. On Saturday last, while making a post-mortem examination for another purpose, he examined the appendix. The appendix contained two hard concretions looking like date seeds and some hardened fæces. These must have been there for a long time, but there were no evidences of inflammation.

A few days before that, he made a post-mortem examination in the case of a man aged 40, who had for years sacrificed every interest in life for his business. On Monday he had some nausea and vomiting, for which he took a laxative. He returned to his home in the evening feeling badly and sent for a physician. There was vomiting; some fever. There was marked abdominal pain, which was relieved by the use of opium suppositories. On the fourth day the speaker examined him, but could detect no tumor in the right iliac region. There was frequent and free micturition. This symptom would have a bearing upon the possible existence of intestinal obstruction. Another marked symptom was tenesmus. Several large stools had followed the laxative. Enemas of warm oil produced no evacuation. Rectal examination gave a sense of indistinct fulness, but showed no hard tumor. Collapse set in on the fifth day and the patient died on the seventh day.

The question of laparotomy was carefully discussed. It was not performed at first because of the uncertainty of the diagnosis, and later, when the diagnosis became evident, because of the symptoms of collapse. At the autopsy no peritonitis was found. There was a contraction of the ascending colon at its junction with the transverse colon, but not sufficient to cause complete obstruction. A circumscribed abscess was found around the vermiform appendix, which was dilated. There was a large perforation, but no obstruction was found.

These cases have impressed upon him the view that perforation of the appendix is only the explosion of an old catarrhal appendicitis, and that it is not an acute idiopathic affection.

The diagnosis in these cases is a matter of great difficulty in the early days, except where it is associated with considerable pericæcal inflammation.

He agreed with Dr. Fitz, that early operation gives the only chance of saving the patient. He did not think the third day too soon. The difficulty is to arrive at a sufficiently clear diagnosis at that early day to justify laparotomy as an exploratory operation.

DR. J. T. DANA, of Portland, Me., thought that it is not rare to find inflammation of the appendix as a latent affection. In a case which he recently saw, the first symptom was the occurrence of general peritonitis. By exclusion he made the probable diagnosis of perforation of the vermiform appendix. The case resulted fatally in seventy-two hours. At the autopsy general peritonitis was found, and there was an opening in the appendix through which a concretion had escaped. A second body was found within the appendix. There had been no previous symptoms to call attention to disease of the appendix. This illustrates a class of cases of which he has seen not a few.

DR. A. L. LOOMIS said that from his experience, he thought that it was impossible in the majority of cases to make an early diagnosis by the ordinary means of diagnosis. Of the symptoms given by the patient the most certain indication seems to be given by the occurrence of a chill. When pain is marked it will usually be localized in the left side, but not necessarily. Recognizing the importance of the early diagnosis, he had decided several years ago in such cases to put the patient under the influence of an anæsthetic and examine by the rectum and externally. In the first case that he adopted this plan, the chilly sensation had preceded his visit twenty-four hours. By bimanual palpation he satisfied himself that there was an increase in the region of the appendix, and expressed the opinion that perforation had occurred and recommended operation. This was refused. Peritonitis set in within twenty-four hours and the patient died. In two other cases he made the diagnosis by the same plan. It must be remembered that the vermiform appendix does not occupy the same position in all individuals.

As soon as the diagnosis of perforation is made out, the operation should be performed.

DR. E. G. JANEWAY, of New York, remarked that these cases of appendix disease may be divided into three classes. In one an inflammatory process of the cellular tissue, with or without the formation of pus, is established. This may go on to recovery. If pus forms, surgical procedures should be resorted to. In another class of cases there is a circumscribed collection of pus in the peritoneal cavity. In this class operation should be resorted to.

DR. WILLIAM M. POLK, of New York, read a paper on

PERI-UTERINE INFLAMMATION.

The purpose of the paper was to consider those masses found about the roof of the vagina, generally to the sides of the uterus, sometimes behind, rarely in front. These have been described under the head of pelvic cellulitis and peritonitis, and have been the cause of much controversy. The speaker considered these masses to be the result of salpingitis due to uterine disease. Under ordinary circumstances the disease travels by way of the tubes, but in septicæmia it travels by all routes. Fifteen cases were re-

ported in which the symptoms and signs ordinarily ascribed to pelvic cellulitis and peritonitis were present, but in which opening of the abdomen showed salpingitis, peritonitis and ovaritis, there being no thickening of the cellular tissue. Except in those cases in which there was shortening of the ligaments, the uterus presented about the normal mobility. Pelvic abscess, in the writer's opinion, was in the majority of cases of tubal origin.

As regards the causation of these masses, anything that will produce endometritis may produce salpingitis and cause these masses.

Prognosis.—Death is the exception. This result is to be expected when septicæmia is the cause of the trouble, or when there is a depraved state of the system. The occurrence of abscess is usually followed by recovery. If the mass remains the permanent cure of the case is doubtful.

In chronic cases, after all other measures have failed operation may be performed. The tubes need not necessarily be removed. The tearing of the adhesions may be sufficient.

Conclusions.—Salpingitis is neither a new nor a rare disease. It is, with peritonitis, the most common form of inflammation about the uterus, holding in point of frequency almost the same relation to the extra-uterine surface as does endometritis to the intra-uterine.

The majority of cases get well. A small number do not get well, and these are capable of causing such danger and distress to the patient that abdominal section and removal of the tubes and ovaries is a necessity.

Dr. W. H. Welch, of Baltimore, read a paper on

AN EXPERIMENTAL STUDY OF GLOMERULO-NEPHRITIS.

Of the various processes which make up the pathological anatomy of Bright s disease, the two which at present awaken the greatest interest and the study of which promises the most fruitful results, are probably the changes which take place in the glomeruli and atrophy and necrosis of the epithelial cells.

The questions which have not as yet received full and satisfactory answers are, What is the origin of cells which often in nephritis occupy the space between the glomeruli and the capsule of Bowman? Does migration of the white corpuscles or diapedisis of the red corpuscles take place through the glomerular capillaries? What relation as to frequency and intensity do changes in the glomeruli play in the pathology of Bright's disease? In expectation that light might be thrown upon these questions, the speaker had experimented on rabbits and white mice, by the production of acute cantharadial poison. A concentrated solution of cantharadin in acetic ether was employed by subcutaneous injection. After a toxic dose, the urine diminishes and is finally suppressed. It contains albumen, hyaline casts, and a large number of leucocytes and red blood corpuscles.

Microscopical examination of the kidney in mice shows here and there foci of infiltration with small round cells, doubtless migrated white blood corpuscles. The epithelium of the convoluted tubes is in places normal in appearance; in other places it is swollen and often the inner part of the cells is broken off, appearing as a granular mass in the lumen of the tube. The most marked change is found in the malphigiæn bodies. In the greater number of these, there is between the glomerulus and Bowman's capsule a wide space, partly or wholly filled with cells. These are larger than white blood corpuscles. They are frequently arranged in a crescentic mass. These appearances are similar to those described in glomerulo nephritis in man. In the latter case these cells are attributed to the swelling and desquamation of either the capsular or glomerular epithelium. Such explanation does not hold in the present case. The epithelium of the capsule is often intact and the glomerular epithelium may retain its normal position. More frequently it is swollen and may desquamate. There are no appearances which justify the derivation of the greater number of the cells from the epithelium of the glomerulus. These cells can not be regarded as white blood corpuscles changed by the action of the poison, for the cells circulating in the blood are exposed to the same poison. These cells may be derived from the epithelium of the convoluted tubes in immediate communication with the malphigian bodies. The cells in the capsular space are identical with those in the convoluted tubes. At times there can be found groups of cells arranged in the form of a ring, with a central space, just like the epithelium of the uriniferous tubules.

It is difficult to decide whether the cells occluding the glomerular capillaries in acute and chronic Bright's disease are white blood corpuscles or endothelial cells, but the speaker inclined to the view that at times they are detached endothelial cells. Swelling of the endothelium and accumulation of cells in the glomerular capillaries appears to be a nearly constant lesion in the acute nephritis of scarlet fever. In one case examined this was almost the only lesion in the kidney. Occasionally pathologists meet with kidneys in which the apparent changes do not explain the symptoms. In such cases careful examination of the glomerular capillaries should be made. It is difficult to think of any lesion of the kidney more destructive to its function than occlusion of the capillaries.

While disposed to attach much importance to the changes in the glomerular capillaries, we are not justified in asserting that these changes constitute the primary and essential cause of Bright's disease. They are co-ordinate with other lesions.

He suggested that instead of the term glomerulo-nephritis, the term glomerulitis be used. The form characterized by accumulation of the cells between the glomerulus and Bowman's capsule may be designated desquamative glomerulitis, and that characterized by the accumulation of cells or by other changes within the capillaries may be called intra-capillary glomerulitis.

Dr. Wm. Osler, of Philadelphia, read a paper on

BICUSPID CONDITION OF THE SEMILUNAR VALVES AND ITS RELATION TO AORTIC VALVE DISEASE.

A bicuspid condition may be said to exist when two of the three sigmoid cusps have more or less

perfectly fused so that the arterial orifice is guarded by only two segments. The points alluded to were: *First.* The frequency of the condition. The abnormality is a well-recognized one. Dilga recently collected the statistics, and has found sixty-four cases of this condition in the pulmonary artery, and twenty-three in the aorta. This statement gives an incorrect idea of its frequency in the latter vessel. In over eight hundred autopsies at the Montreal General Hospital there were eighteen cases, seventeen in the aortic valves alone, and in one pulmonary and aortic segments were both involved. In one hundred and ten cases of valvular disease of all kinds, there were fifty-seven in which the aortic valves were affected, so that this condition existed in over thirty per cent. of all cases of aortic valve disease.

Second. The clinical history. The part played by this condition in aortic valve disease is illustrated by the history of the eighteen cases. Two died suddenly from cardiac syncope. Twelve presented the pictures of chronic aortic insufficiency, and in four the lesion was accidentally found, death having resulted from other causes. In sixteen cases there was hypertrophy of the heart, chiefly of the left ventricle. With the exception of one case, a fœtus at the eighth month, the patients were adults. The ages ranged from 20 to 60 years. This contrasts in a marked manner with the history of this defect in the pulmonary artery. A great majority of the instances present other serious anomalies of development, and death takes place before puberty.

Third. The mode of origin of the lesion. Unquestionably the majority of the cases are congenital, and result either from faulty development or a fœcal endocarditis. The former view seems the more probable. (a). From the fact of the existence of the condition in fœtal life without any traces of endoditis. (b). The occurrence of all grades of the condition, from fusion of the attached terminal margins of continuous segments to perfect fusion of the cusps with scarcely an indication of the line of union. (c). A comparison between the size of the conjoint and single cusps indicate that the anomaly must take place at a very early period of development, as in some instances the single valve equals or is even larger than the fused segments, while in others the slight inequality in size is scarcely consistent with the view that a fœcal endocarditis, subsequent to the formation of the valves, had caused coalescence of the curtains. We do not know accurately the details of the development of the sigmoid valves, but Tonge's interesting observation on the chick that two of the cusps are formed before the third may have some connection with the production of this anomaly.

DR. GEORGE M. STERNBERG, U.S.A., read a paper on

THE BACILLUS OF TYPHOID FEVER.

Recent researches support the view that the bacillus described by Eberth in 1880, bears an etiological relation to enteric fever, although the final proof that such is the case, is still wanting. This proof would consist in the production in one of the lower animals of the specific morbid phenomena, which characterize the disease as it occurs in man, by inoculation of a pure culture of the bacillus. Thus far we have no evidence that anyone of the lower animals is subject to the disease, as it occurs in man; but Fraenkel and Simmonds have shown that the bacillus of Eberth, is a pathogenic organism, and that pure cultures injected into the peritoneal cavity of mice or into the circulation of rabbits causes the death of these animals, and that colonies of the bacillus are found in the spleen, which resemble in every respect the colonies found in the spleen and other organs of typhoid cases.

The researches of Eberth, Meyer, Gaffky, Fraenkel and others, indicate that this bacillus is constantly present in the intestinal glands, and in the spleen of typhoid cases, and that Gaffky has shown that pure cultures may be obtained from the spleen, even in cases in which a microscopical examination fails to demonstrate the presence of the characteristic colonies. The researches of Brieger show that a toxic ptomaine is produced as a result of the vital activity of Eberth's bacillus, when it is cultivated in albuminous culture media. This injected into guinea pigs, causes salivation, diarrhœa, debility, dilated pupils, rapid respiration and death at the end of twenty-four or forty-eight hours.

Demonstrated facts relating to the propogation of typhoid fever indicate that it is due to an organism, which is capable of multiplication external to the human body in a variety of organic media at comparatively low temperatures. Eberth's bacillus complies with these conditions. In consideration, therefore of its constant presence and the absence of any other organism as shown by microscopical examination and culture experiments, the inference seems justifiable in the present state of science, that this bacillus bears an etiological relation to the disease in question.

DR. E. C. SEGUIN, of New York, made a

CLINICAL REPORT OF NINE CASES OF HEMIANOPSIA.

He presented an abstract of nine cases of lateral hemianopsia due to cerebral lesion and called attention to the following points of interest: Of the nine cases, five had right lateral hemianopsia, and four left lateral hemianopsia. Three of the cases of right sided hemianopsia presented the following association of symptoms: hemianopsia, right-sided hemiparesis with post-paralytic ataxia and partial hemianæsthesia. Two of these cases also exhibited alexia without other aphasic symptoms. It is interesting to note that all cases of right-sided hemianopsia do not have alexia, and also that post-paralytic ataxia is not always accompanied by hemianopsia, though probably this is more common than is generally supposed. The six other cases were practically cases of pure hemianopsia, *i. e.*, there were no paralytic or sensory symptoms, or aphasia indicating extensive cerebral disease.

In the first category the lesion is probably placed on the outer edge of the thalmus, so as to involve the fasciculus opticus and the posterior division of the internal capsule. In the second category, the lesion is quite certainly further back or in the white

matter of the occipital lobes. In two cases of the second category, marked and increasing weakness of both legs was present, a symptom perhaps due to the upward and forward extension of a tumor toward the paracentral lobule.

A very peculiar symptom in two cases of the second category, and one which the author thinks is new, was the occurrence of hallucinatory images for a short time in the darkened half-field. This is a symptom of irritation, and analogous to the convulsive movements which sometimes precede paralysis of a limb when its motor centre is being destroyed by disease.

Ophthalmoscopic changes were observed in only one case of the second category. In this case, neuro-retinitis developed in both eyes under the physiciar's observation about one month after the first visit.

In no case was the hemiopic pupillary reaction of Wernicke observed.

A specialy pathological question came up in one case of the second category. In 1883, the patient had glaucoma with irregular hemiopic defect, first in one eye, and later in the other, and yet only fourteen months later was pure geometric hemianopsia found. Could glaucoma produce this? The speaker thought not; being unable to conceive how an intraocular pressure could so affect the retina and optic nerves as to produce a strictly hemiopic defect in dissimilar halves of each eye. A central lesion is quite certain.

A very puzzling point is the perfection of central vision in these and other cases of central hemianopsia. The vertical line always passes by the point of fixation, no matter on which side the blindness is. We must conclude that the macula is not involved in the loss of function, and the question arises, can the macula have a double ennervation from the visual centre? This point the author intends to study thoroughly. The speaker also exhibited specimens illustrating the seat of lesion in certain cases of hemianopsia.

Dr. Henry F. Formad, of Philadelphia, exhibited specimens of

CYANOTIC INDURATION OF THE KIDNEYS.

This condition is produced by anything which interferes with the circulation through the kidneys. The shape of the kidney where the induration results from alcoholism is rounded and shortened. The kidney presents a pig-back appearance. Where the cyanotic induration results from heart disease, the shape of the organ is not altered, as the condition takes place gradually.

The following papers were read by title: *Notes of a Case of Hepatico-Bronchial Fistula*, by Dr. J. E. Graham, of Toronto; *Pancreatic Hæmorrhage as a Cause of Sudden Death*, by Dr. F. W. Draper, of Boston; *Pernicious Anæmia*, by Dr. A. Jacobi, of New York; *A Case of Hodgkins's Disease*, by Dr. F. Forsheimer, of Cincinnati.

A vote of thanks was tendered the Government officers and the profession of Washington for courtesies extended, and the Association adjourned.

NINTH INTERNATIONAL MEDICAL CONGRESS, TO BE HELD IN WASHINGTON, D.C., COMMENCING SEPT. 5, 1887.

PRELIMINARY ORGANIZATION.

SECTION XIV. PUBLIC AND INTERNATIONAL HYGIENE.

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SUBJECTS FOR DISCUSSION AND FOR THE PREPARATION OF MONOGRAPHS.

I. Quarantine.

a. History of quarantine.

b. Conduct of quarantine stations.

c. Sanitation of ships.

d. Sanitation of maritime ports.

e. Regulation and control by sea and land of such diseases as yellow fever, Asiatic cholera, Oriental plague, Oriental leprosy, typhus and typhoid fevers, small-pox, scarlatina and measles.

f. The relations of the duration of quarantine as determined by the natural history of various diseases, and more especially by the period of incubation of their specific poisons.

g. Value of heat (dry heat and heated steam) and steam in the disinfection and cleansing of infected vessels.

h. Relative value of sulphuric acid and other agents, as carbolic acid, sulphate of iron and bichloride of mercury, in disinfection.

i. Describe the apparatus for the application of disinfectants.

j. Quarantine should embrace not merely detention, but also thorough cleansing and disinfection. Whenever necessary, the cargo should be discharged and thoroughly aired and fumigated.

k. Structure and conduct of quarantine hospitals.

l. Land quarantine, its value and mode of conduction.

m. The proper structure, ventilation and conduct of railroads so as to prevent the dissemination of contagious and infectious diseases.

n. Shall the General Governments of the civilized world assume control of all the quarantine systems, and by mutual consent reduce the entire subject of quarantine to order and apply the most improved methods of sanitation and disinfection?

o. Shall the Government of the United States assume charge of the entire subject of quarantine and relieve the individual States of the Union of all further responsibility of regulating quarantine either with foreign countries or with each other?

II. Military Hygiene.

a. Food of the soldier.

b. Clothing of the soldier.

c. Exercise of rest: effects of infantry, cavalry, artillery and bicycle exercise upon the soldier.

d. Shelter. Structure of tents.

e. Water supply of armies; method of testing and improving.

f. Military prisoners and military prisons.

g. The establishment of uniform rules to be recognized by all civilized nations for the treatment, food and clothing of military prisoners, and for the regular and continuous exchange of all military prisoners.

h. Hygienic arrangements of field and general hospitals.

III. Naval Hygiene.

IV. Structure and Arrangement of Prisons and Treatment of Prisoners.

a. Treatment of prisoners: food, clothing and occupation.

b. Has the State the right to work prisoners in swamps and marshes and cause the destruction of human life by the neglect of all the laws of hygiene?

c. Are not deaths occasioned amongst prisoners by cruelty, overwork, scant clothing, poor food, directly chargeable against the officials composing the government, whether acting in behalf of a city, county, State or Government?

V. Structure, Hygienic Arrangements and Ventilation of Buildings.

a. Proper condition of the soil for the location of buildings.

b. Relations of building material to moisture and to fire.

c. Public buildings: legislative halls, depots, churches, etc.

d. School-houses and colleges.

e. Factories.

f. Dwellings.

VI. Influence of Agriculture on Public Health.

a. Influence of overflows on the public health.

b. Importance of drainage; clearage of swamps, marshes and land generally.

c. Influence of the cultivation of rice on the public health.

d. Influence of cotton, tobacco and sugar, and indigo culture on the public health.

VII. Food and Its Adulterations.

a. Influence of different methods of preserving food on the public health.

b. Influence of canned food upon the public health.

c. The injurious effects of lead, copper, tin, zinc, antimony, etc., upon food; said metals being used for culinary vessels, dishes and receptacles.

VIII. Relations of Water to the Public Health.

a. Properties of wholesome potable water.

b. Water supplies of cities.

c. Proper supply to each inhabitant, etc. Transmission of disease germs through the medium of water.

IX. The Influence of Alcohol upon the Public Health.

a. Wine.

b. Malt liquors.

c. Distilled liquors.

X. Influence of Narcotics upon the Public Health.

a. Tobacco.

b. Cannabis indicus.

c. Opium and its preparations.

d. Chloral hydrate, chloroform and ether.

XI. Influence of the Electric Light upon the Public Health.

XII. Influence of the Modern Modes of Travel upon the Public Health.

a. Effects of railroad travel in inducing paralysis.

b. Hygienic structure and conduct of railroad trains so as to avoid the introduction and dissemination of infectious and contagious diseases.

c. Structure and arrangement of sailing and steam ships.

d. Hygienic regulations of officers, crews and passengers.

XIII. Relations of Filth to Public Health.

a. Relative merits of the various plans of sewerage and of the disposal of garbage and fæcal matter.

b. Organization of the scavenger force.

c. Best method of disposing of the dead.

d. Effects of putrefaction in the dissemination of the disease germs of contagious and infectious diseases such as cholera, yellow fever, small-pox, measles, scarlet fever, etc.

e. Cremation.

XIV. Relations of Disease-Germs to the Origin and Spread of Contagious and Infectious Diseases and to Endemic and Epidemic Diseases.

a. Relations of malaria to the public health.

b. Nature of the malarial poison.

c. Physical, chemical and microscopical characters of the poison or cause of the following diseases: Yellow fever, typhoid fever, typhus fever, relapsing fever, measles, scarlatina, syphilis, phthisis, Oriental leprosy, elephantiasis, small-pox.

d. Relations of phthisis to the public health.

e. Relations of syphilis to the public health.
f. Measures for the arrest of small-pox.
g. Value of cow-pox vaccination.
h. Accidents attending vaccination. Transmission of the syphilitic virus through the medium of the vaccine virus.

Authors desiring to contribute to the Fourteenth Section of the Ninth International Medical Congress should commence their labors at the earliest practicable moment and communicate with

JOSEPH JONES, M.D.,
Post Office Box 1500, New Orleans, La.

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40 KENSINGTON SQUARE, W. LONDON, JUNE 8, 1886.

My Dear Sir:—I feel myself highly flattered by the invitation, with which you honor me, that I should be one of the Vice-Presidents of Section XIV of the International Medical Congress about to be held in Washington.

To my very great regret, I have no hope that it will be in my power to attend the Congress; and I feel doubtful whether, in that state of the case, you will still think me qualified for the honor you so kindly propose. This I can only leave to your judgment; subject to which, my answer to your very flattering invitation would of course be, that I should be proud to hold, under your Presidency, any honoring post for which you may deem me fit.

Meanwhile, and at at any rate, permit me to offer you, from this side of the Atlantic, my heartiest good wishes for the success of the Congress in general, and of Section XIV in particular; and believe me, dear sir, with much respect,

Your obliged faithful servant, JOHN SIMON.

Professor Joseph Jones, M.D., 156 Washington Ave., New Orleans, La.

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11 PEMBROKE GARDEN, W. LONDON, JUNE 9, 1886.

JOSEPH JONES, M.D., NEW ORLEANS:

My Dear Sir:—I have the honor to acknowledge the receipt of your letter of May 17 ultimo, in which you express to me your wish that I should be appointed a Vice-President of the Fourteenth Section of the Ninth International Medical Congress, to be held at Washington in 1887.

In reply I have pleasure in informing you that I shall consider it a great honor to fill this office, which will be so worthily presided over by yourself. I sincerely hope that circumstances will permit me to visit America, and to make your personal acquaintance. Yours most faithfully, J. W. THUDICUM, M.D.

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25 MANCHESTER SQUARE, W. LONDON, JUNE 7, 1886.

My Dear Sir:—It will give me the greatest pleasure to accept the office of a Vice-President of the Section on Public and International Hygiene of the International Medical Congress to be held at Washington in September, 1887.

I do not know whether this intimation should be sent to you direct or to some other officer. I therefore send it to you direct with the request that you will send it to the right quarter.

Yours always truly, B. W. RICHARDSON.

Professor Joseph Jones, M.D., Post Office Box 1500, New Orleans, U. S. A.

AMERICAN MEDICAL ASSOCIATION.

FORMED IN 1846.

Next annual meeting will be held June 7th, 8th, 9th, and 10th, 1887, in Chicago, Ill. President, E. H. Gregory, M.D., St. Louis, Mo. Permanent Secretary, W. B. Atkinson, M.D., Philadelphia, Penn. Assistant Secretary, J. Nevins Hyde, M.D., Chicago, Ill. Treasurer, Richard J. Dunglison, M.D., Philadelphia, Penn. Librarian, C. H. A. Kleinschmidt, M.D., Washington, D. C. Chairman of Committee of Arrangements, Charles Gilman Smith, M.D., Chicago, Ill.

All membership dues should be sent direct to the Treasurer, RICHARD J. DUNGLISON, M.D., lock box 1274, Philadelphia, Penn.

FOREIGN CORRESPONDENCE

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Causes of Sterility—The Pancreatic Juice—Horny Tumor of the Scalp—The Abuse of Carbolic Acid—M. Chevreul.

In a clinical lecture recently delivered by Professor Pajot, he stated that among the causes of sterility uterine catarrh is about the most common. Next in the order of frequency may be mentioned the narrowness of the os uteri and the peculiar conical form of its cervix, which is almost characteristic of the sterile condition. When, however, the external orifice of the neck is cup shaped, which gives the sensation to the touch of a small depression produced by a lentil imbedded in potter's clay, the affection in this condition is curable. Another cause of sterility in women is attributed to uterine displacements, which have often been, and still are, turned to profitable account by quacks, and unfortunately, also by medical men who prefer their own interests to those of science. Uterine displacements are divided into two great classes: versions, or deviations, and flexions. The former constitute obstacles almost insurmountable to fecundation, whereas the latter are not always so.

Here is a case in point: "About two years after the war I received a visit from an Austrian lady who came to consult me. On examination I found that she had an extreme retroflexion, for which she had consulted nearly all the doctors in the world, and they all, except Scanzoni, had declared that under the circumstances pregnancy was impossible. She menstruated regularly and without pain. I told her that if the menses could pass out other things could pass in, and that her displacement was not a hopeless obstacle to conception. A week after I saw her she became pregnant, and was subsequently confined naturally, after which I kept her in bed till her menses reappeared (three months), and succeeded in producing a perfectly straight uterus, of which I was very proud. A year later the displacement was as bad as ever, but that did not prevent her from having two or three more children. This fact proves that those who wish to employ great measures are in the wrong by wishing to replace the uterus to its normal position by means of special instruments. This is all useless; the best replacer of the uterus is pregnancy. A displacement cannot be considered as a disease; it is an infirmity, and moreover, an infirmity easy to be borne. It is said that this affection causes great inconveniences to women. For my part, I declare that if women had not been told by the doctor or midwife of the existence of such an

infirmity, they would never suspect it, so little does it inconvenience them. During pregnancy, however, this condition might constitute a grave position. A uterine displacement, when it is not exaggerated, causes no annoyance. It is only in cases of considerable descent, which weighs heavily and drags, that a displacement becomes a real inconvenience. The displacement is, in this case, a real obstacle to fecundation, but this is not an insurmountable obstacle.

"In lateral versions or deviations, the neck of the womb may be closed by the walls of the vagina. It is necessary to be aware of this circumstance, so that the existence of sterility in a woman the subject of such a condition would cause no surprise."

At a recent meeting of the Academy of Sciences Professor Chatin read, for M. Defresne, a well-known pharmacian, a work on the "Pancreatic Juice." In this work the author explains what becomes of this juice when introduced into the stomach at the commencement of a repast, when the acidity of the gastric juice is then the result of the hydrochloric acid which it contains. The new researches of M. Defresne have authorized him to express this opinion, viz.: that the pancreatic juice, when introduced into the gastric juice at the commencement of a repast, passes into the state of zymogen in the circulation, and is afterwards separated by the liver, the parotid glands, and the spleen. In the liver it becomes a hepatic zymosis, capable of saccharifying glycogen; in the parotids, a ptyalic zymosis, capable of saccharifying starch in the mouth; and in the spleen, a zymosis which, transmitted to the pancreas, communicates to the juice of this gland the property of saccharifying starch in the duodenum. These experiments demonstrate the good results which may be obtained by administering pancreatine by the stomach.

At the Academy of Medicine Dr. Vidal recently made a communication on the part of Dr. Dubrandy, of Hyères, in which the author relates a curious case of a horny production of the scalp in the human subject. This horn, remarkable for its size, twisted in a spiral form like the horn of a deer, measured 21 centimetres, or about 8¼ inches, in length, and 6 centimetres, or about 2⅓ inches, in circumference; it is cylindrical, of a deep red color, and its surface is striated and furrowed. This singular production appeared, at the age of 40, in a woman who was very stout, weighing 95 kilogrammes, or about 209½ pounds, and in eleven years, that is to say, to the day of her death, the horn had acquired the dimensions related above.

In a paper by Dr. Léon Gautier, on the "Abuse of Carbolic Acid," the author, in citing a note on the subject in a Swiss medical review, states that several cases have come under his own observation of irritation produced by solutions of carbolic acid, even when largely diluted. Varicose ulcers, furuncules, phlegmonous inflammations are aggravated by phenic acid dressings. Even in traumatisms, when the wound is not simple, when the skin is more or less profoundly contused in its neighborhood, these applications may also be very injurious. Dr. Gautier concludes his paper with the recommendation that carbolic acid ought to be proscribed whenever the skin is inflamed or contused; its use should be reserved to simple wounds, even those of operative wounds effected in healthy tissue.

In the event of the death of a distinguished member of the Academies or of other learned bodies, it is customary, at their first meeting after the occurrence, for the president to pronounce a eulogy on the deceased member and at once dismiss the assembly without further proceedings, as a mark of respect to the departed. A curious contrast to this manifestation of mourning took place at the meeting of the Academy of Sciences last week, when the President took the opportunity of congratulating M. Chevreul, the eminent chemist, on his attaining his 100th year, which, however, he only completes in August next; but in consequence of the probable absence of many of the members during that month, it has been thought fit to anticipate the event. The President, in addressing the illustrious centenarian (the members standing) presented him with a magnificent statue in bronze, representing "Study and Meditation," by M. Paul Dubois, the well-known sculptor, who, in designing the statue, took M. Chevreul himself as a model. A soon as the presentation was made—which was accompanied by a bronze medal bearing his effigy to commemorate the event—the proceedings of the meeting were at once closed, in compliment to the venerable academician, as such a circumstance had never been known in the annals of the Institute. M. Chevreul has been sixty years a member of the Academy of Sciences, he having been elected in 1826, and it will be remembered that ten years ago he was presented with a gold medal bearing his effigy, to commemorate the fiftieth year of his academical career. A. B.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Special Meeting of the Fifth District Branch—Galvano-Cautery in Genito-urinary Diseases—An Excursion to the Catskills.

All who were privileged to attend the recent special meeting of the Fifth District Branch of the New York State Medical Association will long retain the pleasantest memories of that festal occasion. In the morning a meeting of the Executive Committee was held at the rooms of the Young Men's Christian Association at Rondout, on the Hudson, which is now a part of the ancient city of Kingston, with which it is continuous; and afterwards the Fellows, invigorated for the labors of the day by a substantial midday dinner at the Mansion House near by.

In the afternoon the scientific proceedings were opened by a paper by Dr. Wm. B. Eager, of Middletown, Orange county, entitled "*Inquiry as to the Cause of Death Following Confinement, on the Sixth Day, with Singular Nervous Symptoms;*" after which Dr. Robert Newman, of New York, gave a demonstration of a new instrument for galvano-cautery in

diseases of the prostate, bladder and urethra. Dr. J. W. S. Gouley, of New York, expressed himself as entirely opposed to the methods of treatment proposed by Dr. Newman. But, however skeptical he might be, he said, he was certainly open to conviction whenever their utility had been demonstrated to his satisfaction.

Later in the afternoon the company took the cars of the Ulster and Delaware Railroad *en route* for the Hotel Kaaterskill, and with them were quite a large number of ladies, who added no little to the pleasure of this most delightful trip. After leaving Kingston there is a charming view of the mountains on the right, and in the course of a few miles the road enters, at Shokan, the great Shandaken Valley, which is of very considerable width at first, but gradually becomes narrower and increasingly picturesque as one advances into it. Not the least of its attractions is the romantic Esopus River, the course of whose clear-flowing and babbling waters the road follows for many miles; while on either hand loom up the grand old mountains, affording at every turn some new and beautiful prospect. At Phœnicia the party changed cars for the Stony Clove Railroad.

While it does not compare in boldness and grandeur with either the Kaaterskill or the Plaaterkill Clove, Stony Clove has always been one of the noted features of the Catskills, and in former years it was a favorite resort of the disciples of Izaak Walton, who had many an incredible tale to tell of their trouting adventures, and who doubtless now consider the construction of a railway through the midst of their sequestered haunts as nothing short of sacrilege. The writer well remembers a pleasant tramp that he once had, long before the railroad was built here, through Mink Hollow, the next notch to the eastward, and across the mountains to Stony Clove. At one point between the two Cloves the view was of most varied and imposing beauty. To the extreme left loomed the vast Overlook Mountain, from this direction appearing to taper to quite a sharp point, and, very near the lofty summit, the Overlook House, glistening in the sunshine. Next came some smaller spurs of the Catskills, above which we saw the broad valley of the Hudson, the shining river itself, and the hazy Berkshires beyond. A little farther to the right was Lake Hill, round and shapely, with its placid sheet of water at its foot, mirroring the fair blue skies; while directly opposite, in the very centre of the landscape, stood Mount Tobias, the most conical peak in all the Catskills, majestic and solitary, no other mountains being in its immediate vicinity. Next came a group of the mighty Shandohens, among which could be seen Cornell, the Wittenberg, and the great Slide Mountain, the monarch of the range, all clustered together and looking very blue and beautiful at this distance, with outlines so soft and fair that one might readily fancy them the Delectable Mountains, as they appeared to the eye of weary Christian in his toilsome journey. Coming around, in one grand sweep, to the extreme right, we reach the Catskills again, green and near at hand; while immediately behind us towers to a sublime height a huge peak of old Oldabark Mountain, like a great sentinel watching with solemn presence over the whole.

Not long after leaving this enchanting spot we entered the woods, and in almost an hour came down into a Clove which we supposed to be the one we desired. To make sure, we inquired at the first house we came to, and were duly informed that we were on the Stony Clove road. After passing the next house, which was about two miles distant, we plunged into the forest primeval, and the track became more and more overgrown as we proceeded. A wild torrent roared now on one side and now on the other of our path, which became steeper and steeper; and, the scenery growing wilder and wilder at every step, we began to doubt very seriously whether we were in Stony Clove at all. It was some time before any outlook could be obtained, but when we did succeed in this the fact became developed that we were down in a deep gorge between two immense mountains, and that a vast wall towered directly in front of us.

Thinking that we should probably have to spend the night in the woods if we entered much further, we concluded to retrace our steps for two or three miles, till we came to the last house we had passed; and having arrived there, we found a lad to whom we stated we were in considerable doubt as to just where we were at that particular time. To our interrogatory, "*ubi terrarum sumas?*" (which, however, we addressed to him in the vernacular), the ingenuous youth, evidently without any intention whatever of being facetious, replied that this was Greene county. Well, that was encouraging, to be sure, as we supposed that we were still in Ulster county; but, at the same time, the information was scarcely definite enough to be of much practical service. Further questioning, however, elicited the fact that we had been up "Warner's Hill;" and when we inquired where in creation, then, the Stony Clove was, our informant said, pointing to a huge elevation on our right, "On the other side of that mountain." At this statement our hearts went down into our boots, as we thought of a weary tramp of five or ten miles to get around the mountain; but we were quickly reassured when he told us that there was a path through a notch which he pointed out. Taking this, we came out, after a couple of miles' walk through the woods, much to our delight, at Martin's saw-mill in Stony Clove.

As we had to go on a mile further before we could get dinner, it was more than half-past four when we sat down to that meal, and by this time it may well be imagined that our appetites had become sufficiently ravenous. Just as we finished our repast, one of the large chair-wagons which one is apt to meet on the roads in this part of the Catskills, came along, and as we replied in the affirmative to the driver's inquiry, "Be you a goin' through Hunter Notch?" he very kindly offered to give us a lift. We thus rode with him for about three miles, when he turned off to go to Hunter village, whither he was returning with his empty wagon, after taking a load of chairs to Phœnicia.

P. B. P.

(*To be concluded.*)

NECROLOGY.

GEORGE SUTTON, M.D.

GEORGE SUTTON, M.D., of Aurora, Indiana, was born in London, England, June 16, 1812, died at his residence, overlooking the town of Aurora, Indiana, June 13, 1886. In 1819, his parents with their children, emigrated to America and settled at Cincinnati, Ohio, but in the spring of the following year removed to a farm on the White Water in Franklin county, Indiana. Here the subject of this notice grew up as a farmer's son, and received his preliminary education in the country log school house, then common in the new States. His first great sorrow was the death of his mother, which occurred in 1827. In 1828 he was sent to Miami University where he obtained a more thorough knowledge of mathematics and the languages than he had been able to get from any of his previous teachers. We are not informed if he graduated, but his knowledge of the languages was good. In 1832 his father returned to Cincinnati, and the same year he began the study of medicine under Dr. Jesse Smith, who a short time afterwards was attacked with cholera and died. He then entered as a private student of Professor John Eberle, and graduated M.D. at the Ohio Medical College in 1836. While studying in Cincinnati he attended a private course of lectures given by Professor S. D. Gross, then of Cincinnati. His graduating thesis was on the "relation between the blood and the vital principle."

On obtaining his degree he began practice in Aurora, where he has labored most successfully and acceptably to the close of his life. In June, 1838, Dr. Sutton was united in marriage to Miss Sarah Folbre, daughter of Charles Folbre, of Aurora. She bore him four sons and a daughter; the daughter and one son alone survives. His wife died in 1868. One of his sons, a promising physician, died in 1877. The doctor was a close observer, a careful and conscientious practitioner devoted to his profession. He was not only well read in his profession, but was learned for his oportunities beyond what would have been expected in the whole range of the sciences. Although diffident he was one of the most entertaining of men in conversation. His character, too, in every respect was of the most honorable. In the fifty years he lived as a physician in Aurora, no man has been more intimately identified with various interests of the citizens of the place than Dr. Sutton. There was no position of honor or trust within their gift which they would not have cheerfully conferred upon him. In 1862 they chose him Mayor of the city by a practically unanimous vote, and reëlected him for three times, after which he positively declined to serve as it interfered with his professional duties. When in 1866 cholera threatened to become epidemic, Dr. Sutton was by an almost unanimous voice of the city requested to serve as President of the Board of Health, and was most judicious and active in the means taken to protect the city from the disease. The doctor was a ready and vigorous writer, and early in his professional career began the contribution of articles on medicine to the journals. A paper on "Epidemic Erysipelas," or "Black Tongue," was published in the *Western Lancet*, Vol. II, 1840. The mere enumeration by title of his many papers would fill pages. A measurably complete list of these may be seen in a sketch of the doctor's life, in a work entitled "Rocky Mountain Medical Association."

Dr. Sutton was never idle, and had trained his rare natural powers for original observation, so as to be constantly in the advanced guard on all the leading questions engaging the medical profession and the scientists of the day. He was also systematic in arranging his observations and giving them freely to the press to assist others. In 1844 he was instrumental in organizing the Dearborn County Medical Society, which for a time met at his house. This Society was reorganized in 1867, and has continued in active and useful operation ever since. He made frequent and valuable contributions to the various societies to which he belonged. His papers, too, have the rare merit of being on live subjects and practical. He was also a member of the Medical Society of the State of Indiana, a constant attendant at its sessions, and its president in 1869. He became a member of the American Medical Association in 1856, attending again in 59, 67, 71, 72, 73, 74, 75, 76, 77, 81, 82, 83, 84 and 85. At the meeting in New Orleans he read an address as the president of the Rocky Mountain Medical Association, in the St. Charles Hotel, on "The Geology of the Globe and its effect upon Vegetable and Animal Life." It was a paper of rare merit and based upon much research and observation, and well worthy of publication. He was a member of the Centennial International Medical Congress which met in Philadelphia, in 1876, the Archeological Association of Indiana, Fellow of the American Association for the Advancement of Science, and an honorary member of the California State Medical Society.

Immediately after the battle of Pittsburgh Landing Dr. Sutton repaired to the scene of the conflict and tendered his professional services, and was assigned to duty on one of the hospital boats. He labored there efficiently until the emergency was passed, when he returned to his home and his larger and more responsible practice. The State of Indiana has reason to be proud of this earnest physician who for over fifty years had discharged, in a highly acceptable manner, the duties of an intelligent and learned physician, an exemplary christian, and an upright citizen.

J. M. T.

MISCELLANEOUS.

HYDROPHOBIA EXPERIMENT.—The first inoculation against hydrophobia ever done in America was performed July 5 by Dr. Valentine Mott, in the Carnegie Laboratory. Dr. Mott's patient was Harold Newell, seven years old, who was bitten by a dog presumably mad June 24. The inoculation was made from a solution of hydrophobic virus obtained by Pasteur himself from the brain of a dog dead from rabies, and transmitted by him through 110 rabbits.